Originator: S. C. Tumminelli
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Appendix SN-2

Maximum Rock Vertical Stresses

This Appendix presents vertical (Y) stresses for the rock for all 19 load cases analyzed for the soft rock, hard rock and very hard rock models. The input file is provided followed by the two output files, one for the soft and one for the hard rock analyses. This is then followed by the input and output files for the very hard rock analyses.

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Below is the ANSYS input file that scans the database for the maximum rock vertical (Y) stresses. Element type 2 is the rock. This file processes data for both the soft rock and hard rock analyses. Two output files are created.

```
/COM
/OUTPUT,rocksoftystress.out
/COM
/COM      ROCK STRESS DATA SORTED AND PRINTED BY LOAD STEP
/COM
/COM
/COM
/COM      THIS ROUTINE SORTS AND PRINTS ROCK STRESS DATA Sy BY LOAD STEP
/COM
/COM
/com  SOFT ROCK RESULTS
/COM
/file,dcslabs2
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 1  ======================================
/COM
SET,1
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 2  ======================================
/COM
SET,2
ESEL,TYPE,2
NELEM
```

```
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 3  ========================================
/COM
SET,3
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 4  ========================================
/COM
SET,4
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
```

```
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 5  ====================================
/COM
SET,5
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 6  ====================================
/COM
SET,6
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 7  ====================================
/COM
SET,7
ESEL,TYPE,2
```

```
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 8  ========================================
/COM
SET,8
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 9  ========================================
/COM
SET,9
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
```

```
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 10  ================================
/COM
SET,10
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 11  ================================
/COM
SET,11
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 12  ================================
/COM
SET,12
```

```
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 13  ======================================
/COM
SET,13
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 14  ======================================
/COM
SET,14
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
```

```
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 15  ======================================
/COM
SET,15
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 16  ======================================
/COM
SET,16
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 17  ======================================
/COM
```

```
SET,17
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 18  ======================================
/COM
SET,18
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 19  ======================================
/COM
SET,19
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
```

```
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM
EALL
NALL
FINI
/com
/com  HARD ROCK RESULTS
/COM
/OUTPUT,rockhardystress.out
/file,dcslabh2
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 1  =======================================
/COM
SET,1
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 2  =======================================
/COM
SET,2
ESEL,TYPE,2
NELEM
```

```
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 3  ========================================
/COM
SET,3
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 4  ========================================
/COM
SET,4
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
```

```
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 5  ====================================
/COM
SET,5
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 6  ====================================
/COM
SET,6
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 7  ====================================
/COM
SET,7
ESEL,TYPE,2
```

```
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 8  ========================================
/COM
SET,8
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 9  ========================================
/COM
SET,9
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
```

```
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 10  ===================================
/COM
SET,10
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 11  ===================================
/COM
SET,11
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 12  ===================================
/COM
SET,12
```

```
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 13  ======================================
/COM
SET,13
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 14  ======================================
/COM
SET,14
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
```

```
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 15  ====================================
/COM
SET,15
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 16  ====================================
/COM
SET,16
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 17  ====================================
/COM
```

```
SET,17
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 18  ======================================
/COM
SET,18
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 19  ======================================
/COM
SET,19
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
```

```
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM
EALL
NALL
FINI
/OUTPUT
/EXIT
```

Below is the ANSYS output file for the maximum rock vertical (Y) stresses for the soft rock analyses.

```
     ROCK STRESS DATA SORTED AND PRINTED BY LOAD STEP


     THIS ROUTINE SORTS AND PRINTS ROCK STRESS DATA Sy BY LOAD STEP


 SOFT ROCK RESULTS


CURRENT JOBNAME REDEFINED AS dcslabs2

RESUME ANSYS DATA FROM FILE NAME=dcslabs2.db

*** ANSYS GLOBAL STATUS ***

TITLE = Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Soft Rock
ANALYSIS TYPE =  STATIC (STEADY-STATE)
NUMBER OF ELEMENT TYPES =      6
  15348 ELEMENTS CURRENTLY SELECTED.  MAX ELEMENT NUMBER =    33177
  17051 NODES CURRENTLY SELECTED.     MAX NODE NUMBER =       17051
    259 KEYPOINTS CURRENTLY SELECTED. MAX KEYPOINT NUMBER =     259
    250 LINES CURRENTLY SELECTED.     MAX LINE NUMBER =         396
    181 AREAS CURRENTLY SELECTED.     MAX AREA NUMBER =         295
     70 VOLUMES CURRENTLY SELECTED.   MAX VOL. NUMBER =          70
    11 COMPONENTS CURRENTLY DEFINED
MAXIMUM LINEAR PROPERTY NUMBER        =       5
MAXIMUM REAL CONSTANT SET NUMBER      =       6
ACTIVE COORDINATE SYSTEM              =       0  (CARTESIAN)
MAXIMUM CONSTRAINT EQUATION NUMBER    =    4620
NUMBER OF SPECIFIED CONSTRAINTS       =    2193
NUMBER OF NODAL LOADS                 =    2160

INITIAL JOBNAME = dcslabs2
CURRENT JOBNAME = dcslabs2


PRINT HEADER
DO NOT PRINT SUBTITLE(S)
DO NOT PRINT LOAD STEP ID
DO NOT PRINT NOTE LINE(S)
PRINT COLUMN HEADER LABELS
DO NOT PRINT REPORT TOTALS

***** ANSYS - ENGINEERING ANALYSIS SYSTEM  RELEASE 5.7      *****
ANSYS/Structural U
00150104          VERSION=INTEL NT      17:37:44  MAY 17, 2001 CP=      2.433

Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Soft Rock


          ***** ANSYS RESULTS INTERPRETATION (POST1) *****
```

```
ENTER   /SHOW,DEVICE-NAME   TO ENABLE GRAPHIC DISPLAY
ENTER   FINISH              TO LEAVE POST1

*** NOTE ***                                CP=      2.433   TIME= 17:37:44
Reading results into the database (SET command) will update the current
 displacement and force boundary conditions in the database with the
 values from the results file for that load set.  Note that any
 subsequent solutions will use these values unless action is taken to
 either SAVE the current values or not overwrite them (/EXIT,NOSAVE).

   15348  ELEMENTS (OF    15348  DEFINED) SELECTED BY  EALL  COMMAND.

   17051  NODES (OF    17051  DEFINED) SELECTED BY NALL  COMMAND.

================================================================================
================================================================================
================================================================================
================================  SET 1  ======================================


USE LOAD STEP     1  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     1  SUBSTEP=     1  CUMULATIVE ITERATION=     4
  TIME/FREQUENCY=  1.0000
TITLE= Pad, Gravity, 20 Casks, Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ          SXZ
  15875   1.6976     0.17891     0.65512    -0.35397   -0.66666E-07 0.13120E-06
   7931   1.6975     0.17887     0.65507     0.35399   -0.66877E-07-0.13308E-06

NODE SORT REMOVED

================================================================================
======================    MINIMUM VALUES OF Sy    ============================
```

```
SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7587   -6.8830      -15.723      -7.4702      0.47588E-05 0.38007E-05-0.26194E-08
   7555   -6.7654      -15.504      -7.3094      0.39701E-05-0.37045      0.62273E-07

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================== SET 2 ======================================


USE LOAD STEP      2   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      2   SUBSTEP=      1   CUMULATIVE ITERATION=     17
  TIME/FREQUENCY=  2.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips North (Z), Soft Rock

ESEL   FOR LABEL= TYPE   FROM      2 TO      2 BY     1

    1728   ELEMENTS (OF    15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051   DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   8123    7.0985       6.7353       13.602      0.11838E-06 0.51861     -0.17383E-05
   8124    6.9984       6.6462       13.418     -0.23606E-01 0.51478     -0.44074

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2
```

```
SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15684   -9.8833     -18.249     -17.074     -3.2298      12.044      3.3823
   7740   -9.8833     -18.249     -17.074      3.2298      12.044     -3.3823

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================== SET 3 ======================================


USE LOAD STEP     3  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     3  SUBSTEP=     1  CUMULATIVE ITERATION=    26
  TIME/FREQUENCY=  3.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 32.93 W (Z,X), Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
========================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  16067    6.2414      5.9006      11.982    -0.12486E-01 0.46333      1.7388
   8123    6.1693      5.8161      11.864    -0.34062E-01 0.45280      1.4136

NODE SORT REMOVED

================================================================================
========================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE
```

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7532	-13.093	-21.719	-8.7339	6.4594	7.3858	-1.6220
7740	-15.521	-21.512	-19.060	7.0024	12.554	-4.0968

NODE SORT REMOVED

==========
==========
==========
========== SET 4 ==========

USE LOAD STEP 4 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 4 SUBSTEP= 1 CUMULATIVE ITERATION= 30
TIME/FREQUENCY= 4.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 45 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 2 TO 2 BY 1

1728 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

2261 NODES (OF 17051 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NELE COMMAND.

==========
========== MAXIMUM VALUES OF Sy ==========

SORT ON ITEM=S COMPONENT=Y ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
16035	5.5262	5.2308	10.628	-0.36878E-02	0.42297	2.2904
16067	5.5495	5.2182	10.681	-0.26908E-01	0.41565	2.1045

NODE SORT REMOVED

==========
========== MINIMUM VALUES OF Sy ==========

SORT ON ITEM=S COMPONENT=Y ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7532	-15.539	-24.204	-10.426	7.6632	5.9524	-1.3438

```
   7596  -16.014      -24.023      -12.043       7.8679       7.1288      -1.7808

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================== SET 5 ======================================


USE LOAD STEP     5  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     5  SUBSTEP=     1  CUMULATIVE ITERATION=    34
  TIME/FREQUENCY=  5.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 57.07 W (Z,X), Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
  16035   4.7345      4.4439      9.1296    -0.21572E-01 0.36893      2.4686
  16036   4.6687      4.4082      8.9441     0.11532E-01 0.37795      2.5242

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   7596  -18.007     -26.357     -13.133      8.8171       5.4418     -1.3762
   7532  -17.482     -26.183     -11.763      8.6277       4.1758    -0.97371

NODE SORT REMOVED
```

```
================================================================================
================================================================================
================================================================================
================================== SET 6 ======================================


USE LOAD STEP     6  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     6  SUBSTEP=     1  CUMULATIVE ITERATION=    42
  TIME/FREQUENCY=  6.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips West (W), Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15875   9.6271      4.8644      5.0617     0.53507E-01 0.63859E-05-0.59850E-04
  15827   9.5428      4.8228      5.0178     0.57153E-01-0.66498E-02-0.25583

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7596  -20.466     -29.305     -14.529      9.9695     0.54822E-03-0.12741E-03
   7532  -19.931     -28.740     -13.980      9.6988     -1.3101      0.37891

NODE SORT REMOVED

================================================================================
================================================================================
```

```
================================================================================
================================== SET 7 ======================================


USE LOAD STEP     7  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     7  SUBSTEP=     1  CUMULATIVE ITERATION=    54
  TIME/FREQUENCY=  7.0000
TITLE= Pad, HE(1), 20 Casks, 206 Kips North (z), Max Up, Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   8123   3.4357      3.2217      6.6219     0.10676E-06 0.23332    -0.84165E-06
   8124   3.3849      3.1774      6.5272    -0.11539E-01 0.23278    -0.21224

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   7692  -4.4982     -8.7663     -7.0705     0.13941E-05  5.5098    -0.17830E-07
  15671  -4.3889     -8.6225     -6.9563    -0.27991      5.5363     0.95695E-01

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================== SET 8 ======================================
```

```
USE LOAD STEP     8  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     8  SUBSTEP=     1  CUMULATIVE ITERATION=    63
  TIME/FREQUENCY=  8.0000
TITLE= Pad, HE(1), 20 Casks, 206 Kips West (X), Max Up, Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
  15875   4.6638      2.3050      2.4343     0.13708E-01 0.24926E-06-0.52128E-05
  15827   4.6209      2.2847      2.4121     0.16252E-01-0.32866E-02-0.11930

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
   7596  -9.2488     -13.394     -6.6876      4.6412    0.12451E-04-0.26591E-05
   7532  -9.0045     -13.141     -6.4295      4.5132    -0.58639     0.17688

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 9  =======================================


USE LOAD STEP     9  SUBSTEP     0  FOR LOAD CASE 0
```

```
SET COMMAND GOT LOAD STEP=     9  SUBSTEP=     1  CUMULATIVE ITERATION=     69
  TIME/FREQUENCY=  9.0000
TITLE= Pad, HE(3), 20 Casks, 171.2 Kips North (Z), Max Dn, Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   8123   3.8598      2.9533      8.0943     0.46659E-06-0.40414     0.58282E-05
  16067   3.7774      2.9001      7.9264     0.10367E-02-0.36915     0.19681

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   7587  -12.640     -28.940     -13.657     0.65219E-04  2.8766    -0.47705E-05
   7579  -12.469     -28.509     -13.571     0.69123E-04  3.5825    -0.49956E-05

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 10  ======================================


USE LOAD STEP    10  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    10  SUBSTEP=     1  CUMULATIVE ITERATION=     73
  TIME/FREQUENCY=  10.000
```

```
TITLE= Pad, HE(3), 20 Casks, 171.2 Kips West (X), Max Dn, Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.
```

```
================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ          SXZ
  15875   6.8867      2.4705      3.2684    -0.47920   -0.13188E-06-0.52044E-05
  15827   6.7872      2.4397      3.2225    -0.45807   -0.42892E-02-0.14132

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ          SXZ
   7596  -17.602     -32.049     -15.988      9.4206   -0.16246E-04 0.48566E-05
   7595  -16.684     -31.685     -15.593      9.5510     0.58154    -0.19952

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 11  ======================================


USE LOAD STEP    11  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    11  SUBSTEP=     1  CUMULATIVE ITERATION=    85
  TIME/FREQUENCY=  11.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips North (Z), Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1
```

```
    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   8123   6.8558      6.5009      13.142     0.11737E-06 0.49483    -0.16890E-05
   8124   6.7589      6.4147      12.963    -0.22858E-01 0.49131    -0.42566

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
  15684  -9.0958     -16.650     -15.940     -2.9171      11.277       3.1766
   7740  -9.0958     -16.650     -15.940      2.9171      11.277      -3.1766

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 12  ======================================


USE LOAD STEP    12  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    12  SUBSTEP=     1  CUMULATIVE ITERATION=    94
  TIME/FREQUENCY=  12.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 32.93 W (Z,X), Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.
```

```
SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
  16067   6.0117      5.6796      11.545     -0.12701E-01 0.43667      1.6730
  16035   5.8971      5.6046      11.334      0.11338E-01 0.43258      1.9468

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   7532  -12.073     -19.609     -7.9753      6.1253       7.0194     -1.5786
   7740  -14.358     -19.537     -17.654      6.5462       11.649     -3.8625

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 13  ======================================


USE LOAD STEP    13  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    13  SUBSTEP=     1  CUMULATIVE ITERATION=    98
  TIME/FREQUENCY=  13.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 45 W (Z,X), Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
```

```
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
======================    MAXIMUM VALUES OF Sy    ============================

SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
  16035   5.3159      5.0276      10.226    -0.45000E-02 0.39664      2.2035
  16067   5.3298      5.0081      10.261    -0.26564E-01 0.38767      2.0229

NODE SORT REMOVED

================================================================================
======================    MINIMUM VALUES OF Sy    ============================

SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   7532  -14.304     -21.784     -9.4638      7.2644       5.6615     -1.3059
   7596  -14.734     -21.654     -10.918      7.4356       6.7102     -1.6907

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 14  ======================================


USE LOAD STEP    14  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    14  SUBSTEP=     1  CUMULATIVE ITERATION=   102
  TIME/FREQUENCY=  14.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 57.03 W (Z,X), Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
```

```
=======================     MAXIMUM VALUES OF Sy     ============================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  16035    4.5286       4.2451       8.7346    -0.22190E-01 0.33813      2.3695
  16036    4.4794       4.2250       8.5876     0.91400E-02 0.35257      2.4216

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ============================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7596   -16.562      -23.714      -11.894       8.3319       5.1241     -1.3042
   7532   -16.084      -23.546      -10.658       8.1609       3.9881     -0.93901

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
=================================  SET 15  =====================================


USE LOAD STEP     15   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     15   SUBSTEP=      1   CUMULATIVE ITERATION=    110
  TIME/FREQUENCY=  15.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips West (X), Soft Rock

ESEL  FOR LABEL= TYPE  FROM      2 TO      2 BY     1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF     17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ============================
```

```
SORT ON ITEM=S      COMPONENT=Y      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  15875    9.3727       4.7286       4.9255      0.48767E-01 0.40855E-06-0.97421E-05
  15827    9.2896       4.6877       4.8822      0.52316E-01-0.66741E-02-0.24542

NODE SORT REMOVED

================================================================================
======================     MINIMUM VALUES OF Sy     ============================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7596   -18.831      -26.321      -13.150       9.4360     0.61094E-04-0.14323E-04
   7532   -18.345      -25.816      -12.659       9.1858     -1.1842      0.35236

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
==================================  SET 16  ====================================


USE LOAD STEP     16   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     16   SUBSTEP=      1   CUMULATIVE ITERATION=    123
  TIME/FREQUENCY=  16.000
TITLE= Pad, LTSP(2), 20 Casks, 176 Kips North (Z), Max Up, Soft Rock

ESEL   FOR LABEL= TYPE   FROM      2 TO      2 BY     1

    1728   ELEMENTS (OF     15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF     17051   DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
======================     MAXIMUM VALUES OF Sy     ============================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.
```

```
PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   8123    3.1425      2.9851      6.0183     0.16949E-05 0.22608     -0.63359E-05
   8124    3.0984      2.9458      5.9372    -0.10495E-01 0.22425     -0.19531

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   7740   -3.9583     -7.1690     -7.0877      1.2156       5.0012      -1.4196
  15684   -3.9583     -7.1689     -7.0877     -1.2156       5.0012       1.4196

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
==================================  SET 17  ====================================


USE LOAD STEP     17   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     17   SUBSTEP=      1   CUMULATIVE ITERATION=    136
  TIME/FREQUENCY=  17.000
TITLE= Pad, LTSP(2), 20 Casks, 176 Kips West (X), Max Up, Soft Rock

ESEL   FOR LABEL= TYPE   FROM      2 TO      2 BY     1

    1728   ELEMENTS (OF     15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF     17051   DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE
```

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15875	4.3042	2.1795	2.2648	0.22268E-01	0.19371E-05	-0.20897E-04
15827	4.2665	2.1608	2.2451	0.23728E-01	-0.31197E-02	-0.11150

NODE SORT REMOVED

==========

========== MINIMUM VALUES OF Sy ==========

SORT ON ITEM=S COMPONENT=Y ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7596	-8.1717	-10.947	-5.5318	4.2324	0.16586E-03	-0.39818E-04
7532	-7.9687	-10.742	-5.3360	4.1265	-0.49369	0.15144

NODE SORT REMOVED

==========

==========

==========

========== SET 18 ==========

USE LOAD STEP 18 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 18 SUBSTEP= 1 CUMULATIVE ITERATION= 151
TIME/FREQUENCY= 18.000
TITLE= Pad, LTSP(4), 20 Casks, 156 Kips North (Z), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 2 TO 2 BY 1

1728 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

2261 NODES (OF 17051 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NELE COMMAND.

==========

========== MAXIMUM VALUES OF Sy ==========

SORT ON ITEM=S COMPONENT=Y ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
8123	2.9420	2.8069	5.6220	0.15908E-05	0.21390	-0.65118E-05
8124	2.9014	2.7706	5.5478	-0.98218E-02	0.21175	-0.18335

```
NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7740  -3.6552     -6.6333     -6.6041      1.0570      4.5537     -1.3092
  15684  -3.6552     -6.6333     -6.6041     -1.0570      4.5537      1.3092

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 19  ======================================


USE LOAD STEP    19  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    19  SUBSTEP=     1  CUMULATIVE ITERATION=   168
  TIME/FREQUENCY=  19.000
TITLE= Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Soft Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15875   3.9150      2.0029      2.0673     0.19029E-01 0.16113E-06-0.34669E-05
  15827   3.8832      1.9867      2.0506     0.20041E-01-0.27237E-02-0.10173

NODE SORT REMOVED
```

```
================================================================================
======================     MINIMUM VALUES OF Sy     ============================

SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ           SXZ
   7596   -7.4036      -9.4381      -4.8287       3.9096     0.11979E-04-0.15961E-05
   7532   -7.2342      -9.2710      -4.6830       3.8234     -0.41303      0.12701

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================

   15348  ELEMENTS (OF    15348  DEFINED) SELECTED BY  EALL  COMMAND.

   17051  NODES (OF    17051  DEFINED) SELECTED BY NALL  COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED *****  CP =         50.503


*** NOTE ***                                CP=      50.503   TIME= 17:38:51
A total of 1 warnings and errors written to dcslabs2.err.

 HARD ROCK RESULTS

/OUTPUT FILE= rockhardystress.out
```

Below is the ANSYS output file for the maximum rock vertical (Y) stresses for the hard rock analyses.

```
CURRENT JOBNAME REDEFINED AS dcslabh2

RESUME ANSYS DATA FROM FILE NAME=dcslabh2.db

*** ANSYS GLOBAL STATUS ***

TITLE = Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Hard Rock
ANALYSIS TYPE =  STATIC (STEADY-STATE)
NUMBER OF ELEMENT TYPES =      6
  15348 ELEMENTS CURRENTLY SELECTED.  MAX ELEMENT NUMBER =    33177
  17051 NODES CURRENTLY SELECTED.     MAX NODE NUMBER =       17051
    259 KEYPOINTS CURRENTLY SELECTED. MAX KEYPOINT NUMBER =     259
    250 LINES CURRENTLY SELECTED.     MAX LINE NUMBER =         396
    181 AREAS CURRENTLY SELECTED.     MAX AREA NUMBER =         295
     70 VOLUMES CURRENTLY SELECTED.   MAX VOL. NUMBER =          70
    11 COMPONENTS CURRENTLY DEFINED
MAXIMUM LINEAR PROPERTY NUMBER        =       5
MAXIMUM REAL CONSTANT SET NUMBER      =       6
ACTIVE COORDINATE SYSTEM              =       0  (CARTESIAN)
MAXIMUM CONSTRAINT EQUATION NUMBER    =    4620
NUMBER OF SPECIFIED CONSTRAINTS       =    2193
NUMBER OF NODAL LOADS                 =    2160

INITIAL JOBNAME = dcslabs2
CURRENT JOBNAME = dcslabh2


PRINT HEADER
DO NOT PRINT SUBTITLE(S)
DO NOT PRINT LOAD STEP ID
DO NOT PRINT NOTE LINE(S)
PRINT COLUMN HEADER LABELS
DO NOT PRINT REPORT TOTALS

         ***** ANSYS RESULTS INTERPRETATION (POST1) *****

ENTER  /SHOW,DEVICE-NAME  TO ENABLE GRAPHIC DISPLAY
ENTER  FINISH             TO LEAVE POST1


   15348  ELEMENTS (OF    15348  DEFINED) SELECTED BY  EALL  COMMAND.

   17051  NODES (OF    17051  DEFINED) SELECTED BY NALL  COMMAND.

================================================================================
================================================================================
================================================================================
================================  SET 1  =======================================


USE LOAD STEP     1  SUBSTEP     0  FOR LOAD CASE 0
```

```
SET COMMAND GOT LOAD STEP=      1  SUBSTEP=      1  CUMULATIVE ITERATION=      2
  TIME/FREQUENCY=  1.0000
TITLE= Pad, Gravity, 20 Casks, Hard Rock

ESEL  FOR LABEL= TYPE  FROM      2 TO      2 BY     1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF     17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
  15875   2.1146      0.43021     0.88797     -0.27313    -0.52156E-07-0.17264E-06
   7931   2.1145      0.43018     0.88795      0.27314    -0.52104E-07 0.17328E-06

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   7587  -9.8582     -16.322     -9.9464     0.31929E-05 0.17674E-05 0.14734E-08
   7563  -9.6310     -16.200     -9.5682     0.30499E-05-0.35979     -0.37162E-06

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 2  =======================================


USE LOAD STEP      2  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      2  SUBSTEP=      1  CUMULATIVE ITERATION=     17
  TIME/FREQUENCY=  2.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips North (Z), Hard Rock
```

```
ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   8123   6.0312      5.8233      11.511     0.81313E-07 0.70889E-01-0.21977E-05
   8124   5.9070      5.7041      11.277    -0.21123E-01 0.66280E-01-0.53059

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   7676  -10.297     -20.378     -16.770     0.47511      12.512     -0.66821
  15643  -10.297     -20.378     -16.770    -0.47511      12.512      0.66821

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 3  =======================================


USE LOAD STEP     3  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     3  SUBSTEP=     1  CUMULATIVE ITERATION=    30
  TIME/FREQUENCY=  3.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 32.93 W (Z,X), Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1
```

```
    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
  16067    5.5543      5.3454      10.623     -0.74094E-02 0.11880      1.3767
   8123    5.4925      5.2731      10.522     -0.33624E-01 0.11678      0.92935

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   7532   -24.540     -25.061     -13.271      7.1415      11.459      -6.8501
   7596   -25.099     -24.177     -17.095      6.9533      11.714      -7.5667

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 4  =======================================


USE LOAD STEP     4  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     4  SUBSTEP=     1  CUMULATIVE ITERATION=    36
  TIME/FREQUENCY=  4.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 45 W (Z,X), Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.
```

```
    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
  16067   5.1769      4.9607      9.9306    -0.20640E-01 0.15552      1.6283
  16035   5.0656      4.8836      9.7166     0.80196E-02 0.13490      1.9626

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   7532  -29.759     -27.923     -15.379      8.2738       8.8941     -5.4262
   7596  -30.478     -27.711     -18.836      8.2128       9.7128     -6.3685

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 5  =======================================


USE LOAD STEP     5  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     5  SUBSTEP=     1  CUMULATIVE ITERATION=     42
  TIME/FREQUENCY=  5.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 57.07 W (Z,X), Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.
```

```
================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================

SORT ON ITEM=S      COMPONENT=Y      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
  16035   4.6407      4.4536      8.9393    -0.50805E-02 0.17773      2.1044
  16067   4.6346      4.4067      8.9373    -0.36490E-01 0.18456      1.8244

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================

SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   7596  -34.869     -30.608     -20.255      9.2577       7.3493      -4.8745
   7612  -33.874     -30.418     -21.973      8.8418       8.0552      -5.5989

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 6  =======================================


USE LOAD STEP      6  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      6  SUBSTEP=      1  CUMULATIVE ITERATION=     54
  TIME/FREQUENCY=  6.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips West (W), Hard Rock

ESEL  FOR LABEL= TYPE  FROM      2 TO      2 BY     1

    1728  ELEMENTS (OF     15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF     17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================
```

```
SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
  15875   8.0824      4.1017      4.2490    -0.18419    0.55228E-05-0.51649E-04
  15827   7.9920      4.0559      4.2027    -0.17959   -0.56221E-02-0.31579

NODE SORT REMOVED

===============================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
   7596  -40.447     -34.281     -22.341      10.623    0.31389E-03-0.28183E-03
   7532  -39.161     -33.911     -21.536      10.281     -1.4182      1.2722

NODE SORT REMOVED

===============================================================================
===============================================================================
===============================================================================
================================  SET 7  ======================================


USE LOAD STEP     7  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     7  SUBSTEP=     1  CUMULATIVE ITERATION=    74
  TIME/FREQUENCY=  7.0000
TITLE= Pad, HE(1), 20 Casks, 206 Kips North (z), Max Up, Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

===============================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2
```

```
SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   8123   3.1264      2.9809      6.0042     0.17726E-05 0.59439E-01-0.37499E-05
   8124   3.0583      2.9171      5.8757    -0.11277E-01 0.57568E-01-0.27594

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   7676  -4.9831     -9.6032     -7.7630     0.22862      5.6549    -0.28559
  15643  -4.9831     -9.6032     -7.7630    -0.22861      5.6549     0.28558

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 8  =======================================


USE LOAD STEP     8  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     8  SUBSTEP=     1  CUMULATIVE ITERATION=     90
  TIME/FREQUENCY=  8.0000
TITLE= Pad, HE(1), 20 Casks, 206 Kips West (X), Max Up, Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.
```

```
PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
  15875   4.3066      2.1426      2.2494    -0.60908E-01 0.21688E-05-0.10986E-05
  15827   4.2557      2.1174      2.2232    -0.58538E-01-0.36071E-02-0.15752

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   7596  -17.525     -15.389     -10.040      4.7790     0.42562E-04-0.39916E-04
   7532  -16.982     -15.241     -9.6969      4.6319    -0.57194      0.51521

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
=================================  SET 9  ======================================


USE LOAD STEP     9  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     9  SUBSTEP=     1  CUMULATIVE ITERATION=    95
  TIME/FREQUENCY=  9.0000
TITLE= Pad, HE(3), 20 Casks, 171.2 Kips North (Z), Max Dn, Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY     1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
```

```
   8123    4.3128       3.4816       8.8931      0.55350E-06-0.35722     -0.92169E-06
  16067    4.2084       3.4031       8.6835      0.85352E-02-0.32945      0.34368

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

    NODE     SX           SY           SZ           SXY          SYZ          SXZ
    7587  -18.076      -30.099      -18.254      0.51558E-04  4.5974     -0.28928E-05
    7667  -18.013      -29.972      -19.334      0.48831E-04  5.1519     -0.12252E-04

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
=================================  SET 10  =====================================


USE LOAD STEP     10  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     10  SUBSTEP=      1  CUMULATIVE ITERATION=     99
  TIME/FREQUENCY=  10.000
TITLE= Pad, HE(3), 20 Casks, 171.2 Kips West (X), Max Dn, Hard Rock

ESEL  FOR LABEL= TYPE  FROM      2 TO      2 BY     1

    1728  ELEMENTS (OF     15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF     17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

    NODE     SX           SY           SZ           SXY          SYZ          SXZ
   15875   7.6593       2.9564       3.7029      -0.36784  -0.70849E-07-0.20872E-05
   15859   7.5332       2.9096       3.6426      -0.35075   0.64996E-02 0.23087
```

```
NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ          SXZ
   7596  -26.616     -34.131     -21.259      9.2959     0.41587E-05 0.39822E-06
   7532  -25.867     -33.881     -20.440      9.0576    -0.62183     0.31497

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 11  ======================================


USE LOAD STEP    11  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    11  SUBSTEP=     1  CUMULATIVE ITERATION=   117
  TIME/FREQUENCY=  11.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips North (Z), Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ          SXZ
   8123   5.8835      5.6770      11.233     0.81643E-07 0.75237E-01-0.21644E-05
   8124   5.7614      5.5601      11.003    -0.20823E-01 0.70527E-01-0.51820

NODE SORT REMOVED

================================================================================
```

========== MINIMUM VALUES OF Sy ==========

SORT ON ITEM=S COMPONENT=Y ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7676	-9.1916	-17.929	-15.544	0.42858	11.870	-0.62965
15643	-9.1916	-17.929	-15.544	-0.42859	11.870	0.62965

NODE SORT REMOVED

========== SET 12 ==========

USE LOAD STEP 12 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 12 SUBSTEP= 1 CUMULATIVE ITERATION= 130
TIME/FREQUENCY= 12.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 32.93 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 2 TO 2 BY 1

1728 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

2261 NODES (OF 17051 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NELE COMMAND.

========== MAXIMUM VALUES OF Sy ==========

SORT ON ITEM=S COMPONENT=Y ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
16067	5.3870	5.1804	10.307	-0.87111E-02	0.11342	1.3470
8123	5.3159	5.0994	10.187	-0.33449E-01	0.10939	0.91117

NODE SORT REMOVED

========== MINIMUM VALUES OF Sy ==========

```
SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
   7532  -22.440     -22.380     -11.974      6.6613      10.639     -6.4238
   7596  -23.033     -21.729     -15.423      6.5437      10.897     -7.0627

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================== SET 13 ======================================


USE LOAD STEP    13  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    13  SUBSTEP=     1  CUMULATIVE ITERATION=   135
  TIME/FREQUENCY=  13.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 45 W (Z,X), Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
======================    MAXIMUM VALUES OF Sy    ============================

SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
  16067   4.9841      4.7711      9.5643    -0.21670E-01 0.14100      1.5869
  16035   4.8940      4.7124      9.3901     0.54500E-02 0.12544      1.9102

NODE SORT REMOVED

================================================================================
======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.
```

```
PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7532   -27.218     -24.928     -13.875      7.7413      8.2928     -5.0915
   7596   -27.973     -24.821     -17.038      7.7320      9.0473     -5.9384

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================== SET 14 ======================================


USE LOAD STEP     14   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     14   SUBSTEP=      1   CUMULATIVE ITERATION=    141
  TIME/FREQUENCY=  14.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 57.03 W (Z,X), Hard Rock

ESEL   FOR LABEL= TYPE   FROM      2 TO      2 BY     1

    1728   ELEMENTS (OF     15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF     17051   DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

    NODE     SX          SY          SZ          SXY          SYZ          SXZ
   16035   4.4381      4.2518      8.5515    -0.77256E-02  0.15780      2.0345
   16067   4.4123      4.1887      8.5117    -0.36887E-01  0.15934      1.7688

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE
```

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7596	-31.992	-27.354	-18.352	8.7108	6.8520	-4.5411
7612	-31.166	-27.200	-19.937	8.3620	7.5075	-5.2043

NODE SORT REMOVED

========== SET 15 ==========

USE LOAD STEP 15 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 15 SUBSTEP= 1 CUMULATIVE ITERATION= 153
TIME/FREQUENCY= 15.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips West (X), Hard Rock

ESEL FOR LABEL= TYPE FROM 2 TO 2 BY 1

1728 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

2261 NODES (OF 17051 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NELE COMMAND.

========== MAXIMUM VALUES OF Sy ==========

SORT ON ITEM=S COMPONENT=Y ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15875	8.1531	4.1364	4.2859	-0.15408	0.62009E-05	-0.30200E-04
15827	8.0593	4.0888	4.2375	-0.15012	-0.64391E-02	-0.30974

NODE SORT REMOVED

========== MINIMUM VALUES OF Sy ==========

SORT ON ITEM=S COMPONENT=Y ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7596	-37.022	-30.547	-20.235	9.9559	0.20130E-03	-0.17954E-03
7532	-35.868	-30.218	-19.509	9.6514	-1.2601	1.1377

```
 NODE SORT REMOVED

 ================================================================================
 ================================================================================
 ================================================================================
 ================================== SET 16 ======================================


 USE LOAD STEP    16  SUBSTEP     0  FOR LOAD CASE 0

 SET COMMAND GOT LOAD STEP=    16  SUBSTEP=     1  CUMULATIVE ITERATION=   177
   TIME/FREQUENCY=  16.000
 TITLE= Pad, LTSP(2), 20 Casks, 176 Kips North (Z), Max Up, Hard Rock

 ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

     1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

 SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

     2261 NODES (OF    17051  DEFINED) SELECTED FROM
     1728 SELECTED ELEMENTS BY NELE COMMAND.

 ================================================================================
 ======================    MAXIMUM VALUES OF Sy    ==============================

 SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

 SORT COMPLETED FOR       2 VALUES.

 PRINT S    NODAL SOLUTION PER NODE

    NODE    SX          SY          SZ          SXY          SYZ          SXZ
    8123   2.6945      2.6050      5.1392     0.43418E-06 0.33596E-01-0.36277E-05
    8124   2.6388      2.5515      5.0345    -0.96049E-02 0.31203E-01-0.23730

 NODE SORT REMOVED

 ================================================================================
 ======================    MINIMUM VALUES OF Sy    ==============================

 SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

 SORT COMPLETED FOR       2 VALUES.

 PRINT S    NODAL SOLUTION PER NODE

    NODE    SX          SY          SZ          SXY          SYZ          SXZ
    7676  -3.7400     -7.1600     -6.7979     0.17870      5.3135     -0.28510
   15643  -3.7400     -7.1600     -6.7979    -0.17870      5.3135      0.28509

 NODE SORT REMOVED
```

```
================================================================================
================================================================================
================================================================================
================================  SET 17  ======================================


USE LOAD STEP     17  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     17  SUBSTEP=      1  CUMULATIVE ITERATION=    202
  TIME/FREQUENCY=  17.000
TITLE= Pad, LTSP(2), 20 Casks, 176 Kips West (X), Max Up, Hard Rock

ESEL  FOR LABEL= TYPE  FROM      2 TO      2 BY     1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
  15875   3.7747      1.9227      1.9871    -0.67648E-01 0.17773E-05-0.79385E-05
  15827   3.7316      1.9007      1.9647    -0.66064E-01-0.31308E-02-0.14052

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   7596  -16.254     -12.641     -8.6181      4.4912     0.54140E-04-0.47479E-04
   7532  -15.763     -12.502     -8.3128      4.3628     -0.53689     0.49042

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
```

```
================================  SET 18  ===================================


USE LOAD STEP     18  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     18  SUBSTEP=      1  CUMULATIVE ITERATION=    227
  TIME/FREQUENCY=  18.000
TITLE= Pad, LTSP(4), 20 Casks, 156 Kips North (Z), Max Up, Hard Rock

ESEL  FOR LABEL= TYPE  FROM      2 TO      2 BY     1

     1728  ELEMENTS (OF     15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

     2261 NODES (OF     17051  DEFINED) SELECTED FROM
     1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
======================     MAXIMUM VALUES OF Sy     ============================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   8123   2.4985      2.4275      4.7532     0.54095E-05 0.30114E-01-0.33133E-04
   8124   2.4476      2.3785      4.6578    -0.89843E-02 0.27428E-01-0.21963

NODE SORT REMOVED

================================================================================
======================     MINIMUM VALUES OF Sy     ============================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   7740  -4.9203     -6.1108     -11.347      1.4412       4.7219      -2.7630
  15684  -4.9202     -6.1108     -11.347     -1.4411       4.7219       2.7630

NODE SORT REMOVED


================================================================================
================================================================================
================================================================================
================================  SET 19  ===================================
```

```
USE LOAD STEP     19  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     19  SUBSTEP=      1  CUMULATIVE ITERATION=    252
  TIME/FREQUENCY=  19.000
TITLE= Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Hard Rock

ESEL  FOR LABEL= TYPE  FROM      2 TO      2 BY     1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================

SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
  15875   3.2656      1.6797      1.7252    -0.77689E-01 0.26492E-05-0.20837E-04
  15827   3.2326      1.6625      1.7080    -0.76209E-01-0.22554E-02-0.12153

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================

SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   7596  -15.269     -10.933     -7.7042      4.2736     0.12822E-03-0.11054E-03
   7532  -14.822     -10.805     -7.4451      4.1574     -0.50055     0.46489

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================

   15348  ELEMENTS (OF    15348  DEFINED) SELECTED BY  EALL  COMMAND.
```

```
   17051  NODES (OF    17051  DEFINED) SELECTED BY NALL  COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED *****  CP =         99.573


*** NOTE ***                                CP=      99.573   TIME= 17:40:02
A total of 1 warnings and errors written to dcslabs2.err.
```

Below is the ANSYS input file that scans the database for the maximum rock vertical (Y) stresses. Element type 2 is the rock. This file processes data for very hard rock analyses.

```
/COM
/OUTPUT,rockvhardystress.out
/COM
/COM     ROCK STRESS DATA SORTED AND PRINTED BY LOAD STEP
/COM
/COM
/COM
/COM     THIS ROUTINE SORTS AND PRINTS ROCK STRESS DATA Sy BY LOAD STEP
/COM
/COM
/com  VERY HARD ROCK RESULTS
/COM
/file,dcslabh6
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 1  ====================================
/COM
SET,1
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 2  ====================================
/COM
SET,2
ESEL,TYPE,2
NELEM
/COM
```

```
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 3  ========================================
/COM
SET,3
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 4  ========================================
/COM
SET,4
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
```

```
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 5  ====================================
/COM
SET,5
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 6  ====================================
/COM
SET,6
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 7  ====================================
/COM
SET,7
ESEL,TYPE,2
NELEM
```

```
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 8  ========================================
/COM
SET,8
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 9  ========================================
/COM
SET,9
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
```

```
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 10  ===================================
/COM
SET,10
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 11  ===================================
/COM
SET,11
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 12  ===================================
/COM
SET,12
ESEL,TYPE,2
```

```
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 13  ======================================
/COM
SET,13
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 14  ======================================
/COM
SET,14
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
```

```
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 15  ===================================
/COM
SET,15
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 16  ===================================
/COM
SET,16
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 17  ===================================
/COM
SET,17
```

```
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 18  ======================================
/COM
SET,18
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 19  ======================================
/COM
SET,19
ESEL,TYPE,2
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF Sy     ============================
/COM
NSORT,S,Y,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
```

```
/COM ======================    MINIMUM VALUES OF Sy    ============================
/COM
NSORT,S,Y,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM
EALL
NALL
FINI
/OUTPUT
/EXIT
```

Below is the ANSYS output file for the maximum rock vertical (Y) stresses for the very hard rock analyses.

```
     ROCK STRESS DATA SORTED AND PRINTED BY LOAD STEP


     THIS ROUTINE SORTS AND PRINTS ROCK STRESS DATA Sy BY LOAD STEP

  VERY HARD ROCK RESULTS


CURRENT JOBNAME REDEFINED AS dcslabh6

RESUME ANSYS DATA FROM FILE NAME=dcslabh6.db

*** ANSYS GLOBAL STATUS ***

TITLE = Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Very Hard Rock
ANALYSIS TYPE =  STATIC (STEADY-STATE)
NUMBER OF ELEMENT TYPES =      6
  15348 ELEMENTS CURRENTLY SELECTED.  MAX ELEMENT NUMBER =    33177
  17051 NODES CURRENTLY SELECTED.     MAX NODE NUMBER =       17051
    259 KEYPOINTS CURRENTLY SELECTED. MAX KEYPOINT NUMBER =     259
    250 LINES CURRENTLY SELECTED.     MAX LINE NUMBER =         396
    181 AREAS CURRENTLY SELECTED.     MAX AREA NUMBER =         295
     70 VOLUMES CURRENTLY SELECTED.   MAX VOL. NUMBER =          70
    11 COMPONENTS CURRENTLY DEFINED
MAXIMUM LINEAR PROPERTY NUMBER        =       5
MAXIMUM REAL CONSTANT SET NUMBER      =       6
ACTIVE COORDINATE SYSTEM              =       0  (CARTESIAN)
MAXIMUM CONSTRAINT EQUATION NUMBER    =    4620
NUMBER OF SPECIFIED CONSTRAINTS       =    2193
NUMBER OF NODAL LOADS                 =    2160

INITIAL JOBNAME = dcslabh6
CURRENT JOBNAME = dcslabh6


PRINT HEADER
DO NOT PRINT SUBTITLE(S)
DO NOT PRINT LOAD STEP ID
DO NOT PRINT NOTE LINE(S)
PRINT COLUMN HEADER LABELS
DO NOT PRINT REPORT TOTALS

***** ANSYS - ENGINEERING ANALYSIS SYSTEM  RELEASE 5.7     *****
ANSYS/Structural U
00150104          VERSION=INTEL NT      10:40:18  MAY 21, 2001 CP=      3.505

Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Very Hard Rock

         ***** ANSYS RESULTS INTERPRETATION (POST1) *****
```

```
ENTER   /SHOW,DEVICE-NAME   TO ENABLE GRAPHIC DISPLAY
ENTER   FINISH              TO LEAVE POST1

*** NOTE ***                                CP=      3.505   TIME= 10:40:18
Reading results into the database (SET command) will update the current
 displacement and force boundary conditions in the database with the
 values from the results file for that load set.  Note that any
 subsequent solutions will use these values unless action is taken to
 either SAVE the current values or not overwrite them (/EXIT,NOSAVE).


   15348  ELEMENTS (OF    15348  DEFINED) SELECTED BY  EALL  COMMAND.

   17051  NODES (OF    17051  DEFINED) SELECTED BY NALL  COMMAND.

================================================================================
================================================================================
================================================================================
================================  SET 1  =======================================


USE LOAD STEP     1  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     1  SUBSTEP=     1  CUMULATIVE ITERATION=     2
  TIME/FREQUENCY=  1.0000
TITLE= Pad, Gravity, 20 Casks, Very Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ          SXZ
  15875   4.2695     0.80787      1.2139    -0.68994   -0.77367E-08-0.14354E-05
   7931   4.2694     0.80785      1.2139     0.68992   -0.77166E-08 0.14359E-05

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================
```

```
SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7587   -8.7013      -16.359      -8.1776     0.33606E-05 0.21471E-05-0.43729E-09
   7563   -8.4614      -16.245      -7.9603     0.32478E-05-0.32205     -0.77580E-06

NODE SORT REMOVED


================================================================================
================================================================================
================================================================================
================================  SET 2  =======================================


USE LOAD STEP      2   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      2   SUBSTEP=      1   CUMULATIVE ITERATION=     17
  TIME/FREQUENCY=  2.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips North (Z), Very Hard Rock

ESEL   FOR LABEL= TYPE   FROM      2 TO      2 BY     1

    1728   ELEMENTS (OF     15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF     17051   DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   8123    3.1664       3.1400       10.162     -0.16481E-07 0.52132     -0.23997E-05
   8124    3.1003       3.0750       9.9520     -0.13316E-01 0.50725     -0.50335

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2
```

```
SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7676   -10.166     -23.862     -22.080     0.54404     12.410     -0.91715
  15643   -10.166     -23.862     -22.080    -0.54405     12.410      0.91714

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 3  =======================================


USE LOAD STEP     3  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     3  SUBSTEP=     1  CUMULATIVE ITERATION=    32
  TIME/FREQUENCY=  3.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 32.93 W (Z,X), Very Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15489    1.8880      3.8397      4.3535      1.9668      3.5867      1.5437
  15516    6.5429      3.8359      7.2786      3.4496      6.1773      4.4833

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.
```

```
 PRINT S     NODAL SOLUTION PER NODE

    NODE     SX          SY          SZ          SXY         SYZ         SXZ
    7532   -27.062     -27.608     -10.818      6.7261      11.748     -9.8117
    7596   -27.188     -26.599     -14.689      6.5001      11.656     -10.207

 NODE SORT REMOVED

 ================================================================================
 ================================================================================
 ================================================================================
 ================================  SET 4  =======================================


 USE LOAD STEP      4   SUBSTEP      0   FOR LOAD CASE 0

 SET COMMAND GOT LOAD STEP=      4   SUBSTEP=      1   CUMULATIVE ITERATION=     39
   TIME/FREQUENCY=  4.0000
 TITLE= Pad, HE(1), 20 Casks, 515 Kips N 45 W (Z,X), Very Hard Rock

 ESEL   FOR LABEL= TYPE   FROM      2 TO      2 BY     1

     1728  ELEMENTS (OF     15348  DEFINED) SELECTED BY  ESEL   COMMAND.

 SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

     2261 NODES (OF     17051  DEFINED) SELECTED FROM
     1728 SELECTED ELEMENTS BY NELE COMMAND.

 ================================================================================
 ======================     MAXIMUM VALUES OF Sy     ============================


 SORT ON ITEM=S      COMPONENT=Y      ORDER= 0  KABS= 0  NMAX=        2

 .SORT COMPLETED FOR        2 VALUES.

 PRINT S     NODAL SOLUTION PER NODE

    NODE     SX          SY          SZ          SXY         SYZ         SXZ
   15517    3.2093      4.2077      3.0271      2.9509      3.1546      1.8157
   15516    8.7339      4.1004      6.3906      4.1921      5.4782      4.6252

 NODE SORT REMOVED

 ================================================================================
 ======================     MINIMUM VALUES OF Sy     ============================


 SORT ON ITEM=S      COMPONENT=Y      ORDER= 1  KABS= 0  NMAX=        2

 SORT COMPLETED FOR        2 VALUES.

 PRINT S     NODAL SOLUTION PER NODE

    NODE     SX          SY          SZ          SXY         SYZ         SXZ
```

7532	-33.154	-31.127	-12.214	7.6621	9.0065	-7.6553
7596	-33.572	-30.896	-15.883	7.5992	9.6387	-8.5709

NODE SORT REMOVED

==========
==========
==========
========== SET 5 ==========

USE LOAD STEP 5 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 5 SUBSTEP= 1 CUMULATIVE ITERATION= 46
TIME/FREQUENCY= 5.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 57.07 W (Z,X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 2 TO 2 BY 1

1728 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

2261 NODES (OF 17051 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NELE COMMAND.

==========
========== MAXIMUM VALUES OF Sy ==========

SORT ON ITEM=S COMPONENT=Y ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15517	3.7756	4.2750	2.5472	3.4161	2.7378	1.7333
15539	38.076	4.1426	15.349	7.3774	7.1686	7.7996

NODE SORT REMOVED

==========
========== MINIMUM VALUES OF Sy ==========

SORT ON ITEM=S COMPONENT=Y ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7596	-38.847	-34.420	-16.892	8.5434	7.2845	-6.5477
7612	-37.601	-34.225	-19.057	8.2545	7.8232	-7.3657

```
 NODE SORT REMOVED

 ================================================================================
 ================================================================================
 ================================================================================
 ================================== SET 6 ======================================


 USE LOAD STEP     6  SUBSTEP     0  FOR LOAD CASE 0

 SET COMMAND GOT LOAD STEP=     6  SUBSTEP=     1  CUMULATIVE ITERATION=     58
   TIME/FREQUENCY=  6.0000
 TITLE= Pad, HE(1), 20 Casks, 515 Kips West (W), Very Hard Rock

 ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

     1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

 SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

     2261 NODES (OF     17051  DEFINED) SELECTED FROM
     1728 SELECTED ELEMENTS BY NELE COMMAND.

 ================================================================================
 ======================     MAXIMUM VALUES OF Sy     ============================

 SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

 SORT COMPLETED FOR       2 VALUES.

 PRINT S    NODAL SOLUTION PER NODE

    NODE     SX          SY          SZ          SXY         SYZ          SXZ
   15585   4.7523      3.7791      0.49369     3.8392   -0.13918E-03 0.78510E-05
   15581   4.6718      3.7463      0.51130     3.7799   -0.27962    -0.27098

 NODE SORT REMOVED

 ================================================================================
 ======================     MINIMUM VALUES OF Sy     ============================

 SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

 SORT COMPLETED FOR       2 VALUES.

 PRINT S    NODAL SOLUTION PER NODE

    NODE     SX          SY          SZ          SXY         SYZ          SXZ
    7596  -45.600     -38.921     -18.572     9.8183   0.12428E-03-0.16056E-03
    7532  -44.199     -38.563     -17.928     9.5254   -1.2637      1.6300

 NODE SORT REMOVED

 ================================================================================
```

```
================================================================================
================================================================================
================================  SET 7  =======================================


USE LOAD STEP     7  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     7  SUBSTEP=     1  CUMULATIVE ITERATION=     80
  TIME/FREQUENCY=  7.0000
TITLE= Pad, HE(1), 20 Casks, 206 Kips North (z), Max Up, Very Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   8123   1.7126      1.6629      5.5320     0.15827E-05 0.24507    -0.23918E-04
   8124   1.6748      1.6268      5.4119    -0.70162E-02 0.23850    -0.27521

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   7676  -4.8865     -11.047     -9.9752     0.25568      5.6352     -0.37591
  15643  -4.8865     -11.047     -9.9752    -0.25568      5.6352      0.37589

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 8  =======================================
```

```
USE LOAD STEP      8  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      8  SUBSTEP=      1  CUMULATIVE ITERATION=     99
  TIME/FREQUENCY=  8.0000
TITLE= Pad, HE(1), 20 Casks, 206 Kips West (X), Max Up, Very Hard Rock

ESEL  FOR LABEL= TYPE  FROM      2 TO      2 BY     1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF     17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15875   4.1979      1.2597      1.3037     0.79247E-01 0.87327E-07-0.19121E-05
  15859   4.1469      1.2447      1.2881     0.80062E-01 0.26263E-02 0.16970

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7596  -19.518     -17.348     -8.3896      4.4198    0.48134E-05-0.14670E-05
   7532  -18.936     -17.200     -8.1130      4.2986     -0.50305     0.61557

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 9  =======================================
```

```
USE LOAD STEP     9  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     9  SUBSTEP=     1  CUMULATIVE ITERATION=   103
  TIME/FREQUENCY=  9.0000
TITLE= Pad, HE(3), 20 Casks, 171.2 Kips North (Z), Max Dn, Very Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
======================     MAXIMUM VALUES OF Sy     ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   8123   3.3850      2.7435      11.452     0.85350E-06-0.77395    -0.57112E-05
  16067   3.3095      2.6852      11.200     0.49979E-02-0.74544     0.54477

NODE SORT REMOVED

================================================================================
======================     MINIMUM VALUES OF Sy     ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   7587  -15.892     -30.182     -15.039    -0.57905E-05  5.2810     0.96832E-07
   7667  -15.767     -30.128     -16.957    -0.58586E-05  5.6942    -0.32553E-05

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 10  ======================================


USE LOAD STEP    10  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    10  SUBSTEP=     1  CUMULATIVE ITERATION=   106
```

```
  TIME/FREQUENCY=  10.000
TITLE= Pad, HE(3), 20 Casks, 171.2 Kips West (X), Max Dn, Very Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ          SXZ
  15875   10.590      2.5220      3.1328     -0.79804   -0.22240E-06-0.42849E-05
  15859   10.434      2.4863      3.0870     -0.77909    0.51604E-02 0.38943

NODE SORT REMOVED

================================================================================
======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ          SXZ
   7596  -27.000     -36.237     -17.754      8.9623    0.12792E-04-0.11730E-04
   7532  -26.276     -35.990     -17.166      8.7655    -0.53164    -0.60926E-01

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 11  ======================================


USE LOAD STEP    11  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    11  SUBSTEP=     1  CUMULATIVE ITERATION=   122
  TIME/FREQUENCY=  11.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips North (Z), Very Hard Rock
```

```
ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   8123   3.0858      3.0573      9.9065    -0.13371E-07 0.51357    -0.23478E-05
   8124   3.0207      2.9933      9.7000    -0.13098E-01 0.49957    -0.49142

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY          SYZ          SXZ
   7676  -9.1158     -21.002     -20.447     0.49786      11.790     -0.86414
  15643  -9.1158     -21.002     -20.447    -0.49786      11.790      0.86413

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 12  ======================================


USE LOAD STEP    12  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     12  SUBSTEP=      1  CUMULATIVE ITERATION=    136
  TIME/FREQUENCY=  12.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 32.93 W (Z,X), Very Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.
```

```
SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
  15483   21.377      3.9607      25.616      5.2879      7.8347      9.7143
  15521   2.3846      3.3584      3.9544      2.2530      3.3467      1.8050

NODE SORT REMOVED

================================================================================
======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
   7532  -24.653     -24.613     -9.6800      6.2623      10.835     -9.1011
   7596  -24.934     -23.905     -13.203      6.1326      10.823     -9.4912

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 13  ======================================


USE LOAD STEP    13  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    13  SUBSTEP=     1  CUMULATIVE ITERATION=   142
  TIME/FREQUENCY=  13.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 45 W (Z,X), Very Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.
```

```
    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15517   2.8994      3.6698      2.8313      2.5338      2.8778      1.6479
  15516   7.7354      3.6439      5.8187      4.0612      5.3051      4.1679

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF Sy    ============================


SORT ON ITEM=S     COMPONENT=Y     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7532  -30.241     -27.774     -10.986      7.1797      8.3580     -7.1212
   7596  -30.785     -27.671     -14.350      7.1858      8.9662     -7.9631

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
=================================  SET 14  =====================================


USE LOAD STEP    14  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    14  SUBSTEP=     1  CUMULATIVE ITERATION=   149
  TIME/FREQUENCY=  14.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 57.03 W (Z,X), Very Hard Rock

ESEL  FOR LABEL= TYPE  FROM     2 TO     2 BY    1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.
```

```
================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================

SORT ON ITEM=S      COMPONENT=Y      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15517   3.3957      3.8280      2.4090      2.9756      2.5176      1.5651
  15516   9.2163      3.6772      4.6423      4.5543      4.4057      3.8598

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================

SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7596  -35.576     -30.753     -15.311      8.0683      6.7840     -6.0782
   7612  -34.565     -30.607     -17.306      7.8417      7.2865     -6.8209

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 15  ======================================


USE LOAD STEP     15  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     15  SUBSTEP=      1  CUMULATIVE ITERATION=    161
  TIME/FREQUENCY=  15.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips West (X), Very Hard Rock

ESEL  FOR LABEL= TYPE  FROM      2 TO      2 BY     1

    1728  ELEMENTS (OF     15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF     17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================
```

```
SORT ON ITEM=S      COMPONENT=Y      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  15536   11.595       3.3851       1.0174       5.2652      0.38464      0.41045
  15580   11.595       3.3849       1.0178       5.2652     -0.38571     -0.41001

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7596  -41.669      -34.675      -16.858       9.2479  0.19823E-03-0.27637E-03
   7532  -40.424      -34.361      -16.275       8.9901      -1.1150       1.4367

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 16  ======================================


USE LOAD STEP     16  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     16  SUBSTEP=      1  CUMULATIVE ITERATION=    186
  TIME/FREQUENCY=  16.000
TITLE= Pad, LTSP(2), 20 Casks, 176 Kips North (Z), Max Up, Very Hard Rock

ESEL  FOR LABEL= TYPE  FROM      2 TO      2 BY     1

    1728  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF    17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0   KABS= 0   NMAX=        2
```

```
SORT COMPLETED FOR       2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   8123    1.3962      1.3889      4.4770    -0.13317E-07 0.24511    -0.10555E-05
   8124    1.3667      1.3597      4.3834    -0.60438E-02 0.23835    -0.22232

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   7676   -3.7604     -8.4995     -8.9814      0.21171      5.3009    -0.39738
  15643   -3.7604     -8.4995     -8.9814     -0.21172      5.3009     0.39738

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
================================  SET 17  ======================================


USE LOAD STEP     17  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     17  SUBSTEP=      3  CUMULATIVE ITERATION=    257
  TIME/FREQUENCY=  17.000
TITLE= Pad, LTSP(2), 20 Casks, 176 Kips West (X), Max Up, Very Hard Rock

ESEL  FOR LABEL= TYPE  FROM      2 TO      2 BY     1

    1728  ELEMENTS (OF     15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF     17051  DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S     NODAL SOLUTION PER NODE
```

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15585	1.9941	1.5144	0.24589	1.5769	-0.83078E-04	-0.32225E-04
15537	1.9650	1.5064	0.25109	1.5560	0.96663E-01	0.11024

NODE SORT REMOVED

==========
========== MINIMUM VALUES OF Sy ==========

SORT ON ITEM=S COMPONENT=Y ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7596	-18.311	-14.370	-7.1760	4.1957	0.25007E-04	-0.30417E-04
7532	-17.784	-14.239	-6.9308	4.0874	-0.47299	0.62353

NODE SORT REMOVED

==========
==========
==========
========== SET 18 ==========

USE LOAD STEP 18 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 18 SUBSTEP= 3 CUMULATIVE ITERATION= 338
TIME/FREQUENCY= 18.000
TITLE= Pad, LTSP(4), 20 Casks, 156 Kips North (Z), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 2 TO 2 BY 1

1728 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

2261 NODES (OF 17051 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NELE COMMAND.

==========
========== MAXIMUM VALUES OF Sy ==========

SORT ON ITEM=S COMPONENT=Y ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
8123	1.2618	1.2678	4.0339	0.35989E-06	0.24681	-0.95397E-05

```
   8124   1.2353       1.2413       3.9501     -0.56463E-02 0.23988     -0.20035

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7676   -3.2274      -7.2705      -8.2555      0.18367      4.7954     -0.38725
  15643   -3.2274      -7.2705      -8.2555     -0.18366      4.7954      0.38724

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================
=================================  SET 19  =====================================


USE LOAD STEP     19   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     19   SUBSTEP=      3   CUMULATIVE ITERATION=    412
  TIME/FREQUENCY=  19.000
TITLE= Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Very Hard Rock

ESEL   FOR LABEL= TYPE   FROM      2 TO      2 BY     1

    1728   ELEMENTS (OF     15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    2261 NODES (OF     17051   DEFINED) SELECTED FROM
    1728 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF Sy     ===========================


SORT ON ITEM=S      COMPONENT=Y      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  15585    2.1822       1.5897      0.25388       1.8547     0.16795E-04 0.14564E-04
  15581    2.1498       1.5765      0.25864       1.8318     -0.11848     -0.11729

NODE SORT REMOVED
```

```
================================================================================
=======================    MINIMUM VALUES OF Sy    ============================

SORT ON ITEM=S      COMPONENT=Y      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7596   -17.323      -12.473      -6.3636       4.0154     0.83235E-05-0.76864E-05
   7532   -16.836      -12.353      -6.1582       3.9149     -0.44505      0.62518

NODE SORT REMOVED

================================================================================
================================================================================
================================================================================

   15348  ELEMENTS (OF    15348  DEFINED) SELECTED BY  EALL  COMMAND.

   17051  NODES (OF    17051  DEFINED) SELECTED BY NALL  COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED *****  CP =         51.554


*** NOTE ***                                CP=      51.554   TIME= 10:41:30
A total of 2 warnings and errors written to dcslabh6.err.
```

Originator: S. C. Tumminelli
Date: May 25, 2001
Revised: November 30, 2001

Appendix SN-3

Max and Min Pad Stresses – 90% Pad Density

This Appendix presents maximum and minimum X and Z stress data for the pad for load cases 1 through 6 and 11 through 15 analyzed for the soft rock model. The input file is provided followed by the output file for the soft model.

Appendix Contents

ANSYS input file for pad X and Z stresses sheet 2
ANSYS output file for pad X and Z stresses for the soft rock model sheet 18

Below is the ANSYS input file that scans the databases for the max/min X and Z stresses for the soft and hard rock models. This file creates two output files in one execution.

```
/COM
/OUTPUT,pad9Dsoftstress.out
/COM
/COM     STRESS DATA SORTED AND PRINTED BY LOAD STEP
/COM
/COM
/COM
/COM     THIS ROUTINE SORTS AND PRINTS STRESS DATA BY LOAD STEP
/COM     FIRST SX AND THEN SZ
/COM
/com  SOFT ROCK RESULTS
/COM
/file,dcslabs3
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 1  ======================================
/COM
SET,1
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
```

```
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 2  ======================================
/COM
SET,2
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 3  ======================================
/COM
SET,3
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
```

```
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 4  =======================================
/COM
SET,4
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
```

```
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 5  ========================================
/COM
SET,5
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 6  ========================================
/COM
SET,6
ESEL,TYPE,1
NELEM
/COM
```

```
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 11  ======================================
/COM
SET,11
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
```

```
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 12  ======================================
/COM
SET,12
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 13  ======================================
/COM
SET,13
```

```
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 14  ======================================
/COM
SET,14
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
```

```
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 15  ======================================
/COM
SET,15
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
EALL
NALL
FINI
/com
```

```
/com  HARD ROCK RESULTS
/COM
/OUTPUT,pad9Dhardstress.out
/file,dcslabh3
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 1  ====================================
/COM
SET,1
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 2  ====================================
/COM
SET,2
```

```
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 3  ========================================
/COM
SET,3
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
```

```
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 4  ========================================
/COM
SET,4
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 5  ========================================
```

```
/COM
SET,5
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 6  =======================================
/COM
SET,6
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
```

```
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 11  ======================================
/COM
SET,11
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
```

```
/COM ================================================================================
/COM ================================  SET 12  ===================================
/COM
SET,12
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 13  ===================================
/COM
SET,13
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
```

```
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 14  ======================================
/COM
SET,14
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
```

```
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 15  ====================================
/COM
SET,15
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM
EALL
NALL
FINI
/OUTPUT
/EXIT
```

Below is the ANSYS output file for pad X and Z stresses for the soft rock analyses.

```
     STRESS DATA SORTED AND PRINTED BY LOAD STEP


     THIS ROUTINE SORTS AND PRINTS STRESS DATA BY LOAD STEP
     FIRST SX AND THEN SZ

 SOFT ROCK RESULTS


CURRENT JOBNAME REDEFINED AS dcslabs3

RESUME ANSYS DATA FROM FILE NAME=dcslabs3.db

*** ANSYS GLOBAL STATUS ***

TITLE = Pad, 0.9D, LTSP(2), 20 Casks, 440 Kips West (X), Soft Rock
ANALYSIS TYPE =  STATIC (STEADY-STATE)
NUMBER OF ELEMENT TYPES =      6
  15348 ELEMENTS CURRENTLY SELECTED.  MAX ELEMENT NUMBER =    33177
  17051 NODES CURRENTLY SELECTED.     MAX NODE NUMBER =       17051
    259 KEYPOINTS CURRENTLY SELECTED. MAX KEYPOINT NUMBER =     259
    250 LINES CURRENTLY SELECTED.     MAX LINE NUMBER =         396
    181 AREAS CURRENTLY SELECTED.     MAX AREA NUMBER =         295
     70 VOLUMES CURRENTLY SELECTED.   MAX VOL. NUMBER =          70
    11 COMPONENTS CURRENTLY DEFINED
MAXIMUM LINEAR PROPERTY NUMBER        =       5
MAXIMUM REAL CONSTANT SET NUMBER      =       6
ACTIVE COORDINATE SYSTEM              =       0  (CARTESIAN)
MAXIMUM CONSTRAINT EQUATION NUMBER    =    4620
NUMBER OF SPECIFIED CONSTRAINTS       =    2193
NUMBER OF NODAL LOADS                 =    2160

INITIAL JOBNAME = dcslabs3
CURRENT JOBNAME = dcslabs3


PRINT HEADER
DO NOT PRINT SUBTITLE(S)
DO NOT PRINT LOAD STEP ID
DO NOT PRINT NOTE LINE(S)
PRINT COLUMN HEADER LABELS
DO NOT PRINT REPORT TOTALS

***** ANSYS - ENGINEERING ANALYSIS SYSTEM  RELEASE 5.7     *****
ANSYS/Structural U
00150104          VERSION=INTEL NT      18:16:16  JUN 25, 2001 CP=      1.262

Pad, 0.9D, LTSP(2), 20 Casks, 440 Kips West (X), Soft Rock
```

```
          ***** ANSYS RESULTS INTERPRETATION (POST1) *****

ENTER  /SHOW,DEVICE-NAME  TO ENABLE GRAPHIC DISPLAY
ENTER  FINISH             TO LEAVE POST1

*** NOTE ***                                CP=      1.262   TIME= 18:16:16
Reading results into the database (SET command) will update the current
 displacement and force boundary conditions in the database with the
 values from the results file for that load set.  Note that any
 subsequent solutions will use these values unless action is taken to
 either SAVE the current values or not overwrite them (/EXIT,NOSAVE).


   15348  ELEMENTS (OF    15348  DEFINED) SELECTED BY  EALL  COMMAND.

   17051  NODES (OF    17051  DEFINED) SELECTED BY NALL  COMMAND.

================================================================================
================================================================================
================================================================================
================================  SET 1  ======================================


USE LOAD STEP     1  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     1  SUBSTEP=     1  CUMULATIVE ITERATION=     4
  TIME/FREQUENCY=  1.0000
TITLE= Pad, 0.9D, Gravity, 20 Casks, Soft Rock

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
  13416   31.461      1.0589      8.9171   -0.83784E-02-0.86826     -0.54429
   5392   31.461      1.0589      8.9171    0.83757E-02-0.86826      0.54429
```

```
NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

    NODE     SX           SY           SZ           SXY          SYZ          SXZ
    5606   -60.006      -95.065      -20.250       29.324      0.91088      2.1635
   13630   -60.006      -95.066      -20.250      -29.324      0.91088     -2.1635

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

    NODE     SX           SY           SZ           SXY          SYZ          SXZ
    8294    20.885      -5.1102       22.630     -0.57606     -0.88103      2.3480
     270    20.885      -5.1104       22.630      0.57609     -0.88107     -2.3480

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SZ    ============================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

    NODE     SX           SY           SZ           SXY          SYZ          SXZ
     246   -44.903      -5.8092      -53.275      0.12720     -8.3373      2.7639
    8270   -44.902      -5.8092      -53.275     -0.12716     -8.3373     -2.7638

================================================================================
================================================================================
================================================================================
================================  SET 2  =======================================
```

```
USE LOAD STEP     2  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     2  SUBSTEP=     1  CUMULATIVE ITERATION=    17
  TIME/FREQUENCY=  2.0000
TITLE= Pad, 0.9D, HE(1), 20 Casks, 515 Kips North (Z), Soft Rock

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   6613   45.718      155.55     -100.57     0.73488     -27.526     -8.8457
  14637   45.718      155.55     -100.57    -0.73488     -27.526      8.8457

NODE SORT REMOVED

================================================================================
======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   3061  -105.58     -225.25     -80.225     0.31671     -21.707     -5.8639
  11085  -105.58     -225.25     -80.225    -0.31671     -21.707      5.8638

NODE SORT REMOVED

================================================================================
======================    MAXIMUM VALUES OF SZ    ============================
```

```
SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7439   -5.3650     -65.756      254.16      17.206      118.91     -103.85
  15443   -5.3650     -65.756      254.16     -17.206      118.91      103.85

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349   -84.498     -214.83     -391.51      60.062      247.96     -166.76
  15363   -84.498     -214.83     -391.51     -60.063      247.96      166.76

================================================================================
================================================================================
================================================================================
================================  SET 3  =======================================


USE LOAD STEP      3   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      3   SUBSTEP=      1   CUMULATIVE ITERATION=     26
  TIME/FREQUENCY=  3.0000
TITLE= Pad, 0.9D, HE(1), 20 Casks, 515 Kips N 32.93 W (Z,X), Soft Rock

ESEL   FOR LABEL= TYPE   FROM      1 TO      1 BY     1

    9056   ELEMENTS (OF     15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF     17051   DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================


SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2
```

```
SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13630   140.69     -37.743      9.6313      21.065      123.08      115.05
  13512   139.12      10.891      20.879      10.740      15.570      109.56

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349  -261.73     -328.91     -397.60      161.76      271.51     -213.40
   5603  -237.91     -161.95     -34.160      87.657      137.12     -117.29

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15443   113.69     -91.076      220.48      25.472      105.14      134.76
   7439  -155.76     -10.261      213.71      69.844      103.40     -26.998

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE
```

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-261.73	-328.91	-397.60	161.76	271.51	-213.40
7351	-125.44	24.475	-313.51	105.28	-15.922	-129.75

========== SET 4 ==========

USE LOAD STEP 4 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 4 SUBSTEP= 1 CUMULATIVE ITERATION= 31
TIME/FREQUENCY= 4.0000
TITLE= Pad, 0.9D, HE(1), 20 Casks, 515 Kips N 45 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

========== MAXIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13630	184.93	-49.855	5.4696	25.669	91.930	99.857
13512	184.07	15.727	19.983	15.752	9.5538	93.436

NODE SORT REMOVED

========== MINIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ

```
   7349  -310.61      -336.30      -368.01       187.03       255.20      -216.08
   5603  -294.50      -188.80      -35.822       104.28       112.53      -101.42

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  15443   148.54      -93.839       196.18       38.351       94.734       135.88
  15446   113.05       5.1392       188.41       40.828      -2.2761       94.187

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7349  -310.61      -336.30      -368.01       187.03       255.20      -216.08
   7351  -156.59       32.966      -278.16       127.67      -20.997      -138.33

================================================================================
================================================================================
================================================================================
================================  SET 5  =======================================


USE LOAD STEP     5  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     5  SUBSTEP=     1  CUMULATIVE ITERATION=     36
  TIME/FREQUENCY=  5.0000
TITLE= Pad, 0.9D, HE(1), 20 Casks, 515 Kips N 57.07 W (Z,X), Soft Rock

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.
```

```
   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
======================     MAXIMUM VALUES OF SX     ============================


SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15364   225.00      -33.010     -74.061      8.4959      56.853      30.205
  15363   221.41      -21.340     -130.22      89.056      64.429     -10.889

NODE SORT REMOVED

================================================================================
======================     MINIMUM VALUES OF SX     ============================


SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349  -347.55     -318.01     -320.22      200.80      225.82     -210.53
   5603  -339.75     -211.69     -36.438      117.65      82.823     -80.933

NODE SORT REMOVED

================================================================================
======================     MAXIMUM VALUES OF SZ     ============================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15443   179.12      -93.517      166.06      50.244      81.306      132.24
  15446   137.93       10.923      157.78      52.363     -3.6548      95.139

NODE SORT REMOVED

================================================================================
```

```
=======================     MINIMUM VALUES OF SZ     ============================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349   -347.55     -318.01     -320.22      200.80      225.82     -210.53
   7351   -184.73      24.397     -232.78      145.42     -22.391     -141.45

================================================================================
================================================================================
================================================================================
==================================  SET 6  ====================================


USE LOAD STEP      6   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      6   SUBSTEP=      1   CUMULATIVE ITERATION=     45
  TIME/FREQUENCY=  6.0000
TITLE= Pad, 0.9D, HE(1), 20 Casks, 515 Kips West (W), Soft Rock

ESEL  FOR LABEL= TYPE  FROM      1 TO      1 BY     1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ============================


SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13512    247.47      24.346     -6.3114      24.549     -3.8260    -0.31128
  13511    247.47      24.346     -6.3175      24.549      3.8137     0.30163

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ============================
```

```
SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   5606   -392.54      -247.24      -35.848       133.81       10.388       10.528
   5603   -392.54      -247.24      -35.848       133.81      -10.383      -10.530

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   6962   -17.016       7.3555       60.499      -5.1904       9.1934       6.8109
   3989   -17.019       7.3553       60.498      -5.1911      -9.1936      -6.8115

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7349   -374.07      -197.41      -131.06       194.25       100.96      -155.46
   7439   -374.09      -197.42      -131.05       194.26      -100.95       155.46


================================================================================
================================================================================
================================================================================
================================  SET 11  ======================================


USE LOAD STEP     11   SUBSTEP      0   FOR LOAD CASE 0
```

```
SET COMMAND GOT LOAD STEP=    11  SUBSTEP=     1  CUMULATIVE ITERATION=    70
  TIME/FREQUENCY=  11.000
TITLE= Pad, 0.9D, LTSP(2), 20 Casks, 440 Kips North (Z), Soft Rock

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
   7365   41.924     -16.037     -4.6812      2.8440      32.303     -7.4407
  15379   41.924     -16.037     -4.6813     -2.8440      32.303      7.4407

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
   3061  -93.612     -196.24     -67.358     0.27518     -17.808     -5.4201
  11085  -93.612     -196.24     -67.358    -0.27517     -17.808      5.4201

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.
```

```
PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7439   -5.6443     -63.358      244.75      16.761      114.81     -99.989
  15443   -5.6442     -63.358      244.75     -16.761      114.81      99.989

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349   -77.037     -194.51     -365.96      54.533      230.68     -155.72
  15363   -77.037     -194.51     -365.96     -54.533      230.68      155.72

================================================================================
================================================================================
================================================================================
================================  SET 12  ======================================


USE LOAD STEP     12   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     12   SUBSTEP=      1   CUMULATIVE ITERATION=     79
  TIME/FREQUENCY=  12.000
TITLE= Pad, 0.9D, LTSP(2), 20 Casks, 440 Kips N 32.93 W (Z,X), Soft Rock

ESEL   FOR LABEL= TYPE   FROM      1 TO      1 BY     1

    9056   ELEMENTS (OF     15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF     17051   DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================


SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.
```

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13630	131.48	-35.182	4.3389	19.866	117.23	107.05
14342	130.58	-35.342	60.936	19.728	117.14	112.98

NODE SORT REMOVED

========== MINIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-244.24	-300.39	-369.52	150.34	251.39	-199.26
5603	-221.14	-144.97	-30.741	80.349	127.40	-109.63

NODE SORT REMOVED

========== MAXIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15443	111.50	-88.445	212.39	25.935	100.56	130.65
15446	83.240	-0.44199	205.77	28.802	-1.0516	87.129

NODE SORT REMOVED

========== MINIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-244.24	-300.39	-369.52	150.34	251.39	-199.26
7351	-117.69	22.601	-292.17	98.334	-14.806	-121.51

```
================================================================================
================================================================================
================================================================================
================================  SET 13  ======================================


USE LOAD STEP     13   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     13   SUBSTEP=      1   CUMULATIVE ITERATION=     83
  TIME/FREQUENCY=  13.000
TITLE= Pad, 0.9D, LTSP(2), 20 Casks, 440 Kips N 45 W (Z,X), Soft Rock

ESEL   FOR LABEL= TYPE   FROM      1 TO      1 BY     1

     9056   ELEMENTS (OF     15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF     17051   DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================

SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  13630   175.50      -47.350       1.5820       24.567       89.294       92.981
  13512   175.18       14.466       14.994       15.737       10.649       87.139

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================

SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7349  -289.90      -306.67      -341.05       173.85       235.57      -201.58
   5603  -273.42      -168.05      -32.198       95.295       104.57      -94.646
```

```
 NODE SORT REMOVED

 ================================================================================
 ======================    MAXIMUM VALUES OF SZ    ============================


 SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

 SORT COMPLETED FOR       2 VALUES.

 PRINT S    NODAL SOLUTION PER NODE

    NODE    SX          SY          SZ          SXY         SYZ         SXZ
   15443   146.01     -91.239      188.11      39.000      89.813      131.95
   15446   110.21      5.3852      180.78      41.482     -2.3287      92.179

 NODE SORT REMOVED

 ================================================================================
 ======================    MINIMUM VALUES OF SZ    ============================


 SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

 SORT COMPLETED FOR       2 VALUES.

 PRINT S    NODAL SOLUTION PER NODE

    NODE    SX          SY          SZ          SXY         SYZ         SXZ
    7349  -289.90     -306.67     -341.05      173.85      235.57     -201.58
    7351  -146.86      29.893     -258.58      119.29     -19.397     -129.54

 ================================================================================
 ================================================================================
 ================================================================================
 ================================  SET 14  ======================================


 USE LOAD STEP     14  SUBSTEP      0  FOR LOAD CASE 0

 SET COMMAND GOT LOAD STEP=     14  SUBSTEP=      1  CUMULATIVE ITERATION=     87
   TIME/FREQUENCY=  14.000
 TITLE= Pad, 0.9D, LTSP(2), 20 Casks, 440 Kips N 57.03 W (Z,X), Soft Rock

 ESEL  FOR LABEL= TYPE  FROM      1 TO      1 BY     1

     9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

 SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    11550 NODES (OF    17051  DEFINED) SELECTED FROM
     9056 SELECTED ELEMENTS BY NELE COMMAND.
```

```
================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================

SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15364   213.20      -31.635     -73.584      8.3348      56.876      27.848
  15363   209.86      -20.346     -126.77      85.437      63.554     -10.835

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================

SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349  -324.24     -289.62     -295.94      186.68      207.83     -196.22
   5603  -315.29     -187.81     -32.796      107.32      77.154     -75.424

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15443   175.91      -90.808      157.73      50.938      75.975      128.34
  15446   134.11       11.112      149.90      53.068     -3.6362      93.412

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================
```

```
SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349   -324.24     -289.62     -295.94      186.68      207.83     -196.22
   7351   -172.97      21.855     -215.75      135.82     -20.654     -132.43

================================================================================
================================================================================
================================================================================
================================== SET 15  =====================================


USE LOAD STEP     15  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     15  SUBSTEP=      1  CUMULATIVE ITERATION=     95
  TIME/FREQUENCY=  15.000
TITLE= Pad, 0.9D, LTSP(2), 20 Casks, 440 Kips West (X), Soft Rock

ESEL  FOR LABEL= TYPE  FROM      1 TO      1 BY     1

    9056  ELEMENTS (OF     15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF     17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================


SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13512    239.81      22.553     -3.3622      24.735     -3.4247    -0.33467
  13511    239.80      22.553     -3.3559      24.733      3.4113     0.35070

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================


SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2
```

```
SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5603   -364.62     -218.48     -32.505      121.79     -9.1768     -9.6857
   5606   -364.61     -218.48     -32.505      121.78      9.1899      9.6762

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   6962   -16.189      6.9027      55.043     -4.0588      8.2055      6.7615
   3989   -16.191      6.9023      55.039     -4.0595     -8.2060     -6.7603

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349   -348.74     -178.35     -118.90      180.57      91.247     -144.46
   7439   -348.76     -178.36     -118.88      180.58     -91.238      144.46


   15348  ELEMENTS (OF    15348  DEFINED) SELECTED BY  EALL  COMMAND.

   17051  NODES (OF    17051  DEFINED) SELECTED BY NALL  COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR


***** ROUTINE COMPLETED *****  CP =         35.551
```

```
*** NOTE ***                                CP=      35.551   TIME= 18:17:05
A total of 1 warnings and errors written to dcslabs3.err.

 HARD ROCK RESULTS


/OUTPUT FILE= pad9Dhardstress.out
```

Originator: S. C. Tumminelli
Date: May 25, 2001
Reissued: November 30, 2001

Appendix SN-4

BC Study - Maximum and Minimum Pad X and Z Stresses

This Appendix presents maximum and minimum stress data for the pad for all 19 load cases analyzed for the soft rock and hard rock models for the boundary condition study presented in Appendix MD-3. The data is for the stresses in the X and Z directions. The input file is provided followed by the two output files for the soft and hard rock models.

Appendix Contents

ANSYS input file for pad stresses for soft and hard rock models sheet 2
ANSYS output file for the soft rock model sheet 29
ANSYS output file for the hard rock model sheet 61

Below is the ANSYS input file that scans the databases for the max/min X and Z stresses for the soft and hard rock models. This file creates two output files in one execution.

```
/COM
/OUTPUT,padbcsoftstress.out
/COM
/COM      STRESS DATA SORTED AND PRINTED BY LOAD STEP
/COM
/COM
/COM
/COM      THIS ROUTINE SORTS AND PRINTS STRESS DATA BY LOAD STEP
/COM      FIRST SX AND THEN SZ - Boundary Evaluation Analyses
/COM
/com  SOFT ROCK RESULTS
/COM
/file,dcslabs4
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 1  ======================================
/COM
SET,1
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ==============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ==============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ==============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
```

```
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 2  ========================================
/COM
SET,2
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 3  ========================================
/COM
SET,3
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
```

```
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 4  ========================================
/COM
SET,4
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
```

```
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 5  ======================================
/COM
SET,5
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 6  ======================================
/COM
SET,6
ESEL,TYPE,1
NELEM
/COM
```

```
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 7  ========================================
/COM
SET,7
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
```

```
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 8  ====================================
/COM
SET,8
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 9  ====================================
/COM
SET,9
ESEL,TYPE,1
```

```
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 10  ======================================
/COM
SET,10
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
```

```
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 11  ======================================
/COM
SET,11
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 12  ======================================
/COM
```

```
SET,12
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 13  ======================================
/COM
SET,13
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
```

```
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 14  ======================================
/COM
SET,14
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
```

```
/COM ================================  SET 15  ===================================
/COM
SET,15
ESEL,TYPE,1
NELEM
/COM
/COM ============================================================================
/COM ======================    MAXIMUM VALUES OF SX    ==========================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ============================================================================
/COM ======================    MINIMUM VALUES OF SX    ==========================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ============================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ==========================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ============================================================================
/COM ======================    MINIMUM VALUES OF SZ    ==========================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ============================================================================
/COM ============================================================================
/COM ============================================================================
/COM ================================  SET 16  ===================================
/COM
SET,16
ESEL,TYPE,1
NELEM
/COM
/COM ============================================================================
/COM ======================    MAXIMUM VALUES OF SX    ==========================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ============================================================================
/COM ======================    MINIMUM VALUES OF SX    ==========================
/COM
NSORT,S,X,1,0,2,SEL
```

```
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 17  ======================================
/COM
SET,17
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
```

```
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 18  ===================================
/COM
SET,18
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 19  ===================================
/COM
SET,19
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
```

```
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM
EALL
NALL
FINI
/com
/com  HARD ROCK RESULTS
/COM
/OUTPUT,padbchardstress.out
/file,dcslabh4
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 1  ======================================
/COM
SET,1
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
```

```
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0.,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 2  =======================================
/COM
SET,2
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
```

```
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 3  ====================================
/COM
SET,3
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 4  ====================================
/COM
SET,4
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
```

```
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 5  ========================================
/COM
SET,5
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
```

```
/COM =====================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 6  ======================================
/COM
SET,6
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM =====================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM =====================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM =====================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM =====================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 7  ======================================
/COM
SET,7
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM =====================    MAXIMUM VALUES OF SX    ============================
/COM
```

```
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 8  =======================================
/COM
SET,8
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
```

```
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 9  ======================================
/COM
SET,9
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 10  ======================================
/COM
SET,10
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
```

```
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 11  ======================================
/COM
SET,11
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
```

```
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 12  ======================================
/COM
SET,12
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 13  ======================================
/COM
SET,13
ESEL,TYPE,1
NELEM
```

```
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 14  ======================================
/COM
SET,14
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
```

```
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 15  ======================================
/COM
SET,15
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 16  ======================================
/COM
SET,16
```

```
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 17  ======================================
/COM
SET,17
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
```

```
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 18  ======================================
/COM
SET,18
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SX    ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MAXIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================    MINIMUM VALUES OF SZ    ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM ================================  SET 19  ======================================
```

```
/COM
SET,19
ESEL,TYPE,1
NELEM
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SX     ============================
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MAXIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM ================================================================================
/COM ======================     MINIMUM VALUES OF SZ     ============================
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM ================================================================================
/COM ================================================================================
/COM ================================================================================
/COM
EALL
NALL
FINI
/OUTPUT
/EXIT
```

Below is the ANSYS output file for pad stresses for the soft rock analyses.

```
     STRESS DATA SORTED AND PRINTED BY LOAD STEP


     THIS ROUTINE SORTS AND PRINTS STRESS DATA BY LOAD STEP
     FIRST SX AND THEN SZ - Boundary Evaluation Analyses

 SOFT ROCK RESULTS


CURRENT JOBNAME REDEFINED AS dcslabs4

RESUME ANSYS DATA FROM FILE NAME=dcslabs4.db

*** ANSYS GLOBAL STATUS ***

TITLE = Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Soft Rock (Ux,Uz)
ANALYSIS TYPE =  STATIC (STEADY-STATE)
NUMBER OF ELEMENT TYPES =      6
  15348 ELEMENTS CURRENTLY SELECTED.  MAX ELEMENT NUMBER =    33177
  17051 NODES CURRENTLY SELECTED.     MAX NODE NUMBER =       17051
    259 KEYPOINTS CURRENTLY SELECTED. MAX KEYPOINT NUMBER =     259
    250 LINES CURRENTLY SELECTED.     MAX LINE NUMBER =         396
    181 AREAS CURRENTLY SELECTED.     MAX AREA NUMBER =         295
     70 VOLUMES CURRENTLY SELECTED.   MAX VOL. NUMBER =          70
    12 COMPONENTS CURRENTLY DEFINED
MAXIMUM LINEAR PROPERTY NUMBER        =       5
MAXIMUM REAL CONSTANT SET NUMBER      =       6
ACTIVE COORDINATE SYSTEM              =       0  (CARTESIAN)
MAXIMUM CONSTRAINT EQUATION NUMBER    =    4620
NUMBER OF SPECIFIED CONSTRAINTS       =    1785
NUMBER OF NODAL LOADS                 =    2160
CURRENT LOAD CASE =      0 OF      0
LOAD SET    =      19
SUBSTEP     =       1
TIME/FREQ   =    19.000

INITIAL JOBNAME = dcslabs4
CURRENT JOBNAME = dcslabs4


PRINT HEADER
DO NOT PRINT SUBTITLE(S)
DO NOT PRINT LOAD STEP ID
DO NOT PRINT NOTE LINE(S)
PRINT COLUMN HEADER LABELS
DO NOT PRINT REPORT TOTALS

***** ANSYS - ENGINEERING ANALYSIS SYSTEM  RELEASE 5.7      *****
ANSYS/Structural U
00150104          VERSION=INTEL NT      12:15:26  MAY 18, 2001 CP=      5.668
```

```
Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Soft Rock (Ux,Uz)


         ***** ANSYS RESULTS INTERPRETATION (POST1) *****

ENTER   /SHOW,DEVICE-NAME   TO ENABLE GRAPHIC DISPLAY
ENTER   FINISH              TO LEAVE POST1

*** NOTE ***                                  CP=      5.668   TIME= 12:15:26
Reading results into the database (SET command) will update the current
 displacement and force boundary conditions in the database with the
 values from the results file for that load set.  Note that any
 subsequent solutions will use these values unless action is taken to
 either SAVE the current values or not overwrite them (/EXIT,NOSAVE).


   15348  ELEMENTS (OF    15348  DEFINED) SELECTED BY  EALL  COMMAND.

   17051  NODES (OF    17051  DEFINED) SELECTED BY NALL  COMMAND.

================================================================================
================================================================================
================================================================================
================================  SET 1  ======================================


USE LOAD STEP     1  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     1  SUBSTEP=     1  CUMULATIVE ITERATION=     4
  TIME/FREQUENCY=  1.0000
TITLE= Pad, Gravity, 20 Casks, Soft Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE
```

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13416	33.071	1.0598	9.6661	-0.16902E-01	-0.86930	-0.53947
5392	33.071	1.0598	9.6661	0.16899E-01	-0.86930	0.53947

NODE SORT REMOVED

==========

========== MINIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
1677	-59.721	-6.5781	-37.893	-9.3367	1.6482	2.1992
1678	-59.721	-6.5781	-37.893	-9.3367	-1.6482	-2.1992

NODE SORT REMOVED

==========

========== MAXIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
8294	22.069	-5.4535	23.697	-0.58738	-1.0306	2.3955
270	22.069	-5.4537	23.697	0.58741	-1.0306	-2.3956

NODE SORT REMOVED

==========

========== MINIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
246	-46.239	-5.8911	-53.721	0.11702	-8.3704	2.7603
8270	-46.239	-5.8911	-53.721	-0.11699	-8.3704	-2.7603

==========

```
================================================================================
================================================================================
================================  SET 2  =======================================


USE LOAD STEP     2  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     2  SUBSTEP=     1  CUMULATIVE ITERATION=    17
  TIME/FREQUENCY=  2.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips North (Z), Soft Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
   6613   44.443      155.49     -100.63      0.79354    -27.084     -9.3054
  14637   44.443      155.49     -100.63     -0.79354    -27.084      9.3054

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
   3061  -106.42     -225.37     -71.119      0.32148    -20.760     -5.8368
  11085  -106.42     -225.37     -71.119     -0.32147    -20.760      5.8368

NODE SORT REMOVED
```

```
================================================================================
======================     MAXIMUM VALUES OF SZ     ============================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7439   -5.6042     -70.719      269.43      17.829      127.66     -112.57
  15443   -5.6042     -70.719      269.43     -17.829      127.66      112.57

NODE SORT REMOVED

================================================================================
======================     MINIMUM VALUES OF SZ     ============================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349   -87.008     -222.93     -394.88      64.776      254.25     -174.39
  15363   -87.008     -222.93     -394.88     -64.776      254.25      174.39

================================================================================
================================================================================
================================================================================
================================  SET 3  =======================================


USE LOAD STEP      3  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      3  SUBSTEP=      1  CUMULATIVE ITERATION=     26
  TIME/FREQUENCY=  3.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 32.93 W (Z,X), Soft Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM      1 TO      1 BY     1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
```

```
=======================     MAXIMUM VALUES OF SX     ============================

SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13630   145.34      -38.898      6.2949      21.920      130.77      119.98
  13512   143.70       11.178      17.011      11.388      17.532      114.48

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ============================

SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349  -268.85      -335.86     -399.10      169.06      276.54     -222.91
   5603  -237.22      -162.90     -32.911      88.051      142.42     -122.07

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ============================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15443   121.91      -98.108      233.37      28.706      112.59      146.47
  15446   91.658     -0.19901      225.74      31.873     -1.6095      97.547

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ============================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2
```

```
 SORT COMPLETED FOR       2 VALUES.

 PRINT S     NODAL SOLUTION PER NODE

    NODE     SX          SY          SZ          SXY         SYZ         SXZ
    7349   -268.85     -335.86     -399.10      169.06      276.54     -222.91
    7351   -129.13      25.279     -311.78      110.90     -17.980     -136.78

 ================================================================================
 ================================================================================
 ================================================================================
 ================================== SET 4  ======================================


 USE LOAD STEP     4  SUBSTEP     0  FOR LOAD CASE 0

 SET COMMAND GOT LOAD STEP=     4  SUBSTEP=     1  CUMULATIVE ITERATION=    30
   TIME/FREQUENCY=  4.0000
 TITLE= Pad, HE(1), 20 Casks, 515 Kips N 45 W (Z,X), Soft Rock (Ux,Uz)

 ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

     9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

 SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

    11550 NODES (OF    17051  DEFINED) SELECTED FROM
     9056 SELECTED ELEMENTS BY NELE COMMAND.

 ================================================================================
 ======================    MAXIMUM VALUES OF SX    ==============================


 SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

 SORT COMPLETED FOR       2 VALUES.

 PRINT S     NODAL SOLUTION PER NODE

    NODE     SX          SY          SZ          SXY         SYZ         SXZ
   13630    192.33     -51.797      2.0434      26.930      99.153      104.31
   13512    191.61      16.301      16.513      16.792      11.435      97.845

 NODE SORT REMOVED

 ================================================================================
 ======================    MINIMUM VALUES OF SX    ==============================


 SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

 SORT COMPLETED FOR       2 VALUES.
```

```
PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349   -318.59     -341.88     -368.11      194.30      259.28     -225.39
   5603   -293.75     -189.76     -34.294      104.65      116.79     -105.33

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ.     ==========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15443    159.61     -101.07      206.80      42.855      100.93      147.67
  15446    121.35      6.1510      198.53      45.548     -3.0039      102.73

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ==========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349   -318.59     -341.88     -368.11      194.30      259.28     -225.39
   7351   -161.17      32.224     -275.66      133.64     -22.790     -145.34

================================================================================
================================================================================
================================================================================
==================================  SET 5  ====================================


USE LOAD STEP      5   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      5   SUBSTEP=      1   CUMULATIVE ITERATION=     35
  TIME/FREQUENCY=  5.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 57.07 W (Z,X), Soft Rock (Ux,Uz)

ESEL   FOR LABEL= TYPE   FROM      1 TO      1 BY     1
```

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

==========
========== MAXIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15364	233.70	-34.353	-76.831	9.0810	60.021	31.284
15363	230.15	-22.594	-134.70	92.540	68.051	-10.722

NODE SORT REMOVED

==========
========== MINIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-356.11	-323.29	-319.36	208.17	229.16	-219.36
5603	-339.20	-213.06	-34.876	118.13	86.154	-83.904

NODE SORT REMOVED

==========
========== MAXIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15443	192.52	-100.48	173.67	55.807	85.803	143.29
15446	147.87	12.391	165.03	58.076	-4.4058	103.57

```
NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SZ    ============================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 1  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349   -356.11     -323.29     -319.36      208.17      229.16     -219.36
   7351   -189.74      23.533     -229.62      151.50     -24.105     -148.24

================================================================================
================================================================================
================================================================================
==================================  SET 6  =====================================


USE LOAD STEP      6  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      6  SUBSTEP=      1  CUMULATIVE ITERATION=     43
  TIME/FREQUENCY=  6.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips West (W), Soft Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM      1 TO      1 BY     1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================

SORT ON ITEM=S      COMPONENT=X      ORDER= 0  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13512    260.16      25.261     -6.9703      26.373     -3.9165    -0.34108
  13511    260.15      25.261     -6.9611      26.371      3.8948     0.36615
```

```
NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5603  -392.39     -248.86     -34.262      134.29     -10.987     -10.299
   5606  -392.39     -248.86     -34.263      134.29      11.007      10.284

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   6962  -16.643      7.4897      62.376     -5.1075      9.5308      7.0624
   3989  -16.647      7.4890      62.369     -5.1086     -9.5317     -7.0610

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349  -381.98     -200.52     -127.32      200.25      101.29     -161.04
   7439  -382.02     -200.54     -127.30      200.27     -101.28      161.04

================================================================================
================================================================================
================================================================================
================================  SET 7  =======================================
```

```
USE LOAD STEP     7  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     7  SUBSTEP=     1  CUMULATIVE ITERATION=    55
  TIME/FREQUENCY=  7.0000
TITLE= Pad, HE(1), 20 Casks, 206 Kips North (z), Max Up, Soft Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15379   19.026     -11.032     -1.9859     -2.4690      16.131      4.3008
   7365   19.026     -11.032     -1.9859      2.4692      16.131     -4.3008

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   3061  -43.990     -93.280     -4.2440     0.17645E-01 -9.4154     -2.9276
  11085  -43.982     -93.276     -4.2762    -0.15374E-01 -9.4107      2.9286

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================
```

```
SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7439   -4.4618     -33.708      128.91      9.3536      62.367     -53.743
  15443   -4.4611     -33.707      128.91     -9.3527      62.365      53.742

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349   -40.762     -103.77     -174.70      30.317      113.22     -77.672
  15363   -40.762     -103.77     -174.70     -30.316      113.22      77.672

================================================================================
================================================================================
================================================================================
================================  SET 8  =======================================


USE LOAD STEP     8  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     8  SUBSTEP=     1  CUMULATIVE ITERATION=    64
  TIME/FREQUENCY=  8.0000
TITLE= Pad, HE(1), 20 Casks, 206 Kips West (X), Max Up, Soft Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2
```

```
SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15447   120.56      -7.4824      16.242      4.1519      10.433      26.248
  15364   120.56      -7.4788      16.254      4.1524     -10.431     -26.243

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================

SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5606  -174.01     -111.79     -16.235      59.982      4.5632      4.6120
   5603  -174.01     -111.79     -16.235      59.982     -4.5634     -4.6116

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================

SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   3989  -4.9699      3.5107      28.122     -1.8918     -4.1041     -3.8160
   6962  -4.9700      3.5107      28.122     -1.8917      4.1041      3.8160

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SZ    ============================

SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE
```

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7439	-168.29	-93.311	-57.022	89.285	-45.245	71.297
7349	-168.29	-93.309	-57.022	89.284	45.245	-71.297

========== SET 9 ==========

USE LOAD STEP 9 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 9 SUBSTEP= 1 CUMULATIVE ITERATION= 70
TIME/FREQUENCY= 9.0000
TITLE= Pad, HE(3), 20 Casks, 171.2 Kips North (Z), Max Dn, Soft Rock (Ux,Uz)

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

========== MAXIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13530	62.254	11.174	21.572	-1.7038	-0.75586	-3.3027
5506	62.246	11.178	21.573	1.7066	-0.74981	3.3052

NODE SORT REMOVED

========== MINIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ

1678	-114.09	-11.943	-64.070	-17.045	-0.15372	7.2461
9702	-114.09	-11.943	-64.070	17.045	-0.15372	-7.2458

NODE SORT REMOVED

==========

========== MAXIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15443	-26.632	5.6032	87.301	-11.204	58.321	21.250
7439	-26.635	5.6055	87.301	11.203	58.322	-21.250

NODE SORT REMOVED

==========

========== MINIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-73.088	-135.69	-197.29	48.574	126.66	-100.38
15363	-73.086	-135.68	-197.29	-48.573	126.66	100.38

==========

==========

==========

========== SET 10 ==========

USE LOAD STEP 10 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 10 SUBSTEP= 1 CUMULATIVE ITERATION= 73
TIME/FREQUENCY= 10.000
TITLE= Pad, HE(3), 20 Casks, 171.2 Kips West (X), Max Dn, Soft Rock (Ux,Uz)

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

```
   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15443    84.229      0.43268    -16.663      41.414     -4.8553      15.648
  15363    84.222      0.26644    -16.697      41.367      4.8758     -15.645

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5606   -235.79     -244.58     -42.888      96.567      6.0049      7.1456
   5603   -235.79     -244.58     -42.887      96.566     -6.0065     -7.1441

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   3989    35.958      2.9759      60.261      0.55912     -5.7984     -14.967
   6962    35.957      2.9758      60.260      0.55892      5.7984      14.967

NODE SORT REMOVED

================================================================================
```

```
=======================     MINIMUM VALUES OF SZ     ============================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   8270   -89.840      -12.133      -105.83       3.2269      -17.851      -2.0126
  11120   -89.845      -12.132      -105.82       3.2255       17.852       2.0105

================================================================================
================================================================================
================================================================================
=================================  SET 11  =====================================


USE LOAD STEP     11   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     11   SUBSTEP=      1   CUMULATIVE ITERATION=     85
  TIME/FREQUENCY=  11.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips North (Z), Soft Rock (Ux,Uz)

ESEL   FOR LABEL= TYPE   FROM      1 TO      1 BY     1

    9056   ELEMENTS (OF     15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF     17051   DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================

SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7365    42.500      -17.219      -4.6174       4.4703       32.634      -8.4556
  15379    42.500      -17.219      -4.6174      -4.4703       32.634       8.4556

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================
```

```
SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   3061   -93.590     -196.48     -59.606     0.12838     -17.459     -5.7627
  11085   -93.590     -196.48     -59.606    -0.12837     -17.459      5.7627

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7439   -5.5303     -68.326      259.90      17.247      123.36     -108.63
  15443   -5.5302     -68.326      259.90     -17.247      123.36      108.63

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349   -79.673     -202.82     -372.15      59.116      238.31     -164.04
  15363   -79.673     -202.82     -372.15     -59.116      238.31      164.04

================================================================================
================================================================================
================================================================================
================================  SET 12  ======================================


USE LOAD STEP     12   SUBSTEP      0   FOR LOAD CASE 0
```

```
SET COMMAND GOT LOAD STEP=     12  SUBSTEP=      1  CUMULATIVE ITERATION=     94
  TIME/FREQUENCY=  12.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 32.93 W (Z,X), Soft Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM      1 TO      1 BY     1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================


SORT ON ITEM=S      COMPONENT=X      ORDER= 0  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13630   137.20      -36.608      1.8789      20.985      125.18      112.64
  14342   136.77      -36.847      58.355      20.907      126.57      119.44

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================


SORT ON ITEM=S      COMPONENT=X      ORDER= 1  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349  -252.62     -308.55     -373.79      158.15      257.94     -209.62
   5603  -222.08     -146.31     -29.728      81.170      133.69     -115.09

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.
```

```
PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15443   119.82      -95.414      225.05      29.195      107.79      142.21
  15446   89.527     0.74435E-01   217.85      32.309     -1.6737      95.140

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349  -252.62     -308.55     -373.79      158.15      257.94     -209.62
   7351  -122.04      23.486     -292.92      104.26     -16.843     -128.95

================================================================================
================================================================================
================================================================================
==================================  SET 13  ====================================


USE LOAD STEP    13  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    13  SUBSTEP=     1  CUMULATIVE ITERATION=    98
  TIME/FREQUENCY=  13.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 45 W (Z,X), Soft Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE
```

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13630	183.53	-49.496	-0.31737	25.896	95.996	97.899
13512	183.18	15.071	13.064	16.810	12.197	91.899

NODE SORT REMOVED

==========

========== MINIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-299.64	-313.68	-343.87	181.91	241.16	-211.87
5603	-274.95	-169.40	-30.972	96.212	109.76	-99.216

NODE SORT REMOVED

==========

========== MAXIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15443	156.84	-98.328	198.65	43.374	95.882	143.48
15446	118.29	6.3426	190.84	46.047	-3.0064	100.55

NODE SORT REMOVED

==========

========== MINIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-299.64	-313.68	-343.87	181.91	241.16	-211.87
7351	-152.38	29.360	-258.38	125.80	-21.225	-137.10

```
================================================================================
================================================================================
================================================================================
================================  SET 14  ======================================


USE LOAD STEP    14  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    14  SUBSTEP=     1  CUMULATIVE ITERATION=   102
  TIME/FREQUENCY=  14.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 57.03 W (Z,X), Soft Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
  15364   222.95     -33.129     -76.548      8.8960      60.166      29.073
  15363   219.67     -21.329     -131.62      89.492      67.284     -10.744

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
   7349  -334.93     -296.29     -297.42      195.04      212.46     -206.02
   5603  -317.34     -189.47     -31.546      108.38      81.160     -78.933

NODE SORT REMOVED
```

```
================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15443   189.22      -97.677      165.34      56.417      80.374      139.18
  15446   143.96       12.544      157.15      58.688     -4.3520      101.71

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349  -334.93     -296.29     -297.42      195.04      212.46     -206.02
   7351  -179.18      21.135     -214.51      142.63     -22.416     -139.84

================================================================================
================================================================================
================================================================================
================================  SET 15  ======================================


USE LOAD STEP     15   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     15   SUBSTEP=      1   CUMULATIVE ITERATION=    110
  TIME/FREQUENCY=  15.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips West (X), Soft Rock (Ux,Uz)

ESEL   FOR LABEL= TYPE   FROM      1 TO      1 BY     1

    9056   ELEMENTS (OF     15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF     17051   DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.
```

```
================================================================================
=======================    MAXIMUM VALUES OF SX    ============================

SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13512   252.92      23.491     -2.9286      26.569     -3.5009    -0.38831
  13511   252.92      23.491     -2.9275      26.569      3.4986     0.39198

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================

SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5606  -367.43     -220.19     -31.182      122.86      9.7588      9.5277
   5603  -367.43     -220.19     -31.182      122.86     -9.7557     -9.5300

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================

SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   6962  -16.150      7.0886      56.978     -3.9207      8.5390      7.0243
   3989  -16.151      7.0885      56.977     -3.9209     -8.5390     -7.0246

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SZ    ============================

SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2
```

```
SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349   -359.39     -182.59     -116.04      187.89      92.067     -150.85
   7439   -359.40     -182.59     -116.03      187.89     -92.065      150.85

================================================================================
================================================================================
================================================================================
================================== SET 16 ======================================


USE LOAD STEP    16  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    16  SUBSTEP=     1  CUMULATIVE ITERATION=   123
  TIME/FREQUENCY=  16.000
TITLE= Pad, LTSP(2), 20 Casks, 176 Kips North (Z), Max Up, Soft Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15379    19.620     -6.3770     -2.1807     -1.8165      14.235      3.6649
   7365    19.620     -6.3770     -2.1807      1.8166      14.235     -3.6650

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2
```

```
SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   3061   -38.928     -78.821     -28.511     0.73686E-01 -6.7698     -2.4718
  11085   -38.926     -78.835     -28.505    -0.75282E-01 -6.7722      2.4560

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   7439   -2.3555     -31.446      119.19      7.8301       56.560     -49.909
  15443   -2.3602     -31.445      119.18     -7.8309       56.558      49.909

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   7349   -34.334     -87.557     -168.24      25.486       106.98     -73.783
  15363   -34.334     -87.556     -168.24     -25.485       106.98      73.782

================================================================================
================================================================================
================================================================================
==================================  SET 17  ====================================


USE LOAD STEP    17  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    17  SUBSTEP=     1  CUMULATIVE ITERATION=    136
  TIME/FREQUENCY=  17.000
TITLE= Pad, LTSP(2), 20 Casks, 176 Kips West (X), Max Up, Soft Rock (Ux;Uz)
```

```
ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
======================     MAXIMUM VALUES OF SX     ============================

SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ           SXY         SYZ         SXZ
  13512   116.94      10.478    0.12691E-01    12.685     -1.4992    -0.18998
  13511   116.94      10.478    0.16049E-01    12.685      1.4931     0.20002

NODE SORT REMOVED

================================================================================
======================     MINIMUM VALUES OF SX     ============================

SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5603  -164.63     -89.824     -13.169      53.016     -4.0445     -4.1934
   5606  -164.63     -89.823.    -13.170      53.015      4.0520      4.1876

NODE SORT REMOVED

================================================================================
======================     MAXIMUM VALUES OF SZ     ============================

SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   6962  -8.2884      3.2612      24.272     -1.2896      3.6013      3.1336
```

```
   3989  -8.2896      3.2609      24.269     -1.2900     -3.6016     -3.1335

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7349  -162.98     -80.042     -50.077      85.054      39.890     -67.696
   7439  -162.99     -80.045     -50.068      85.058     -39.885      67.694

================================================================================
================================================================================
================================================================================
================================  SET 18  ======================================


USE LOAD STEP    18  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    18  SUBSTEP=     1  CUMULATIVE ITERATION=   151
  TIME/FREQUENCY=  18.000
TITLE= Pad, LTSP(4), 20 Casks, 156 Kips North (Z), Max Up, Soft Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  15379   18.629     -5.6794     -2.0691     -1.6469      13.091      3.2072
   7365   18.629     -5.6794     -2.0691      1.6469      13.091     -3.2072
```

NODE SORT REMOVED

========== MINIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-33.644	-65.164	-31.967	0.10639	-6.1600	-2.1306
11085	-33.638	-65.165	-31.960	-0.10865	-6.1604	2.1233

NODE SORT REMOVED

========== MAXIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7439	-1.5498	-29.840	111.98	7.1192	53.202	-47.261
15443	-1.5538	-29.839	111.97	-7.1201	53.201	47.260

NODE SORT REMOVED

========== MINIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-31.170	-81.864	-158.42	23.475	100.47	-68.903
15363	-31.170	-81.864	-158.42	-23.475	100.47	68.903

========== SET 19 ==========

```
USE LOAD STEP    19  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    19  SUBSTEP=     1  CUMULATIVE ITERATION=   168
  TIME/FREQUENCY=  19.000
TITLE= Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Soft Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13512   107.84      9.9097     -1.2771      11.778     -1.3931    -0.13639
  13511   107.84      9.9097     -1.2772      11.777      1.3926     0.13636

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   7439  -157.12     -79.811     -46.132      82.782     -37.680      63.981
   7349  -157.12     -79.811     -46.133      82.782      37.681     -63.982

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================
```

```
SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   5622  -0.28750      4.8751       22.253       1.0284      -3.4851     -0.19993
   5619  -0.28748      4.8752       22.253       1.0284       3.4852      0.19991

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7349  -157.12      -79.811      -46.133       82.782       37.681      -63.982
   7439  -157.12      -79.811      -46.132       82.782      -37.680       63.981

================================================================================
================================================================================
================================================================================

   15348  ELEMENTS (OF    15348  DEFINED) SELECTED BY  EALL  COMMAND.

   17051  NODES (OF    17051  DEFINED) SELECTED BY NALL  COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED *****  CP =         65.054


*** NOTE ***                                CP=      65.054   TIME= 12:16:46
A total of 1 warnings and errors written to dcslabs4.err.

 HARD ROCK RESULTS

/OUTPUT FILE= padbchardstress.out
```

Below is the ANSYS output file for pad stresses for the hard rock analyses.

```
CURRENT JOBNAME REDEFINED AS dcslabh4

RESUME ANSYS DATA FROM FILE NAME=dcslabh4.db

*** ANSYS GLOBAL STATUS ***

TITLE = Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Hard Rock (Ux,Uz)
ANALYSIS TYPE =  STATIC (STEADY-STATE)
NUMBER OF ELEMENT TYPES =      6
  15348 ELEMENTS CURRENTLY SELECTED.  MAX ELEMENT NUMBER =     33177
     14 NODES CURRENTLY SELECTED.     MAX NODE NUMBER =        17051
    259 KEYPOINTS CURRENTLY SELECTED. MAX KEYPOINT NUMBER =      259
      0 LINES CURRENTLY SELECTED.     MAX LINE NUMBER =          396
    181 AREAS CURRENTLY SELECTED.     MAX AREA NUMBER =          295
     70 VOLUMES CURRENTLY SELECTED.   MAX VOL. NUMBER =           70
     12 COMPONENTS CURRENTLY DEFINED
MAXIMUM LINEAR PROPERTY NUMBER        =       5
MAXIMUM REAL CONSTANT SET NUMBER      =       6
ACTIVE COORDINATE SYSTEM              =       0  (CARTESIAN)
MAXIMUM CONSTRAINT EQUATION NUMBER    =    4620
NUMBER OF SPECIFIED CONSTRAINTS       =    1785
NUMBER OF NODAL LOADS                 =    2160

INITIAL JOBNAME = dcslabs4
CURRENT JOBNAME = dcslabh4


PRINT HEADER
DO NOT PRINT SUBTITLE(S)
DO NOT PRINT LOAD STEP ID
DO NOT PRINT NOTE LINE(S)
PRINT COLUMN HEADER LABELS
DO NOT PRINT REPORT TOTALS

         ***** ANSYS RESULTS INTERPRETATION (POST1) *****

ENTER  /SHOW,DEVICE-NAME  TO ENABLE GRAPHIC DISPLAY
ENTER  FINISH             TO LEAVE POST1


   15348  ELEMENTS (OF    15348  DEFINED) SELECTED BY  EALL  COMMAND.

   17051  NODES (OF    17051  DEFINED) SELECTED BY NALL  COMMAND.

================================================================================
================================================================================
================================================================================
================================  SET 1  ======================================
```

```
USE LOAD STEP     1  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     1  SUBSTEP=     1  CUMULATIVE ITERATION=     2
  TIME/FREQUENCY=  1.0000
TITLE= Pad, Gravity, 20 Casks, Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ          SXZ
   6626   16.163     -54.126     -10.712     -2.0745     0.16844E-01  1.6189
  14650   16.163     -54.126     -10.712      2.0745     0.16844E-01 -1.6189

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ          SXZ
   9693  -20.050     -6.6711     -10.080     -9.1259      1.5572       1.9563
   9692  -20.050     -6.6711     -10.080     -9.1259     -1.5572      -1.9563

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2
```

```
SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5189   -11.168     -45.658      9.2776     0.54483     2.5898     0.55154E-01
  13213   -11.168     -45.658      9.2776    -0.54483     2.5898    -0.55154E-01

NODE SORT REMOVED

================================================================================
======================    MINIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   8270   -11.431     -6.3983     -18.525     0.42263E-02 -8.3326    -0.51567
    246   -11.431     -6.3983     -18.525    -0.42226E-02 -8.3326     0.51567

================================================================================
================================================================================
================================================================================
================================  SET 2  =======================================


USE LOAD STEP     2  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     2  SUBSTEP=     1  CUMULATIVE ITERATION=    17
  TIME/FREQUENCY=  2.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips North (Z), Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.
```

```
PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   6613   51.302      157.21      -66.515     0.53611     -25.956     -2.4615
  14637   51.302      157.21      -66.515    -0.53611     -25.956      2.4615

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================

SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  11085  -79.357     -225.80     -26.741    -0.69893E-01 -21.422      1.5479
   3061  -79.357     -225.80     -26.741     0.69894E-01 -21.422     -1.5479

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   4551   19.839      22.789      75.567     0.58276      64.106     -7.8259
  12575   19.839      22.789      75.567    -0.58276      64.106      7.8259

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  14700  -42.415     -30.737     -195.71    -0.81781      81.517      8.4243
```

```
   6676  -42.415      -30.737      -195.71      0.81781       81.517      -8.4243

================================================================================
================================================================================
================================================================================
================================  SET 3  ======================================


USE LOAD STEP     3  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     3  SUBSTEP=     1  CUMULATIVE ITERATION=    30
  TIME/FREQUENCY=  3.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 32.93 W (Z,X), Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   6626   70.139     -174.88     -72.816     -19.655      22.783     -16.802
   5914   69.779     -175.27     -48.947     -19.804      20.712     -6.3081

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13993  -132.04     -13.207     -56.730      38.089      5.5578     -50.903
  14705  -126.42     -13.477     -50.004      34.805     -2.0997     -42.092
```

```
NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5263   21.055      18.808      70.966      7.5106      53.077      14.218
   4551   21.644      18.794      67.696      7.3380      52.870      14.074

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  11120  -79.934     -26.428     -167.70      7.0785      69.534     -43.823
  14700  -81.014     -26.009     -167.12      1.2626      66.078     -34.822

================================================================================
================================================================================
================================================================================
================================  SET 4  =======================================


USE LOAD STEP      4   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      4   SUBSTEP=      1   CUMULATIVE ITERATION=     36
  TIME/FREQUENCY=  4.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 45 W (Z,X), Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM      1 TO      1 BY     1

    9056  ELEMENTS (OF     15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF     17051  DEFINED) SELECTED FROM
```

```
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================

SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5202    81.003     -203.26     -53.144     -22.079      14.812     0.29604
   4490    80.956     -203.10     -57.790     -22.145      14.880    -0.28959

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================

SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13993   -177.21     -17.802     -57.098      49.533      1.2080     -45.320
  13992   -170.75     -24.256     -92.569      62.775      14.377     -48.339

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5908   -42.692     -14.481      62.745      22.291      9.8032      2.3045
   5196   -42.633     -14.437      62.619      22.075      9.4249      2.9146

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================
```

```
SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  11120   -94.800     -22.786     -137.59      9.6219      59.551     -51.300
  14700   -93.742     -22.299     -137.27      1.3985      56.150     -38.149

================================================================================
================================================================================
================================================================================
================================== SET 5 ======================================


USE LOAD STEP      5  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      5  SUBSTEP=      1  CUMULATIVE ITERATION=     42
  TIME/FREQUENCY=  5.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 57.07 W (Z,X), Hard Rock (Ux,Uz)

ESEL   FOR LABEL= TYPE   FROM      1 TO      1 BY     1

    9056   ELEMENTS (OF    15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF     17051   DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================


SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
    5202   89.189     -224.23     -55.217     -23.212      8.8550      6.1429
    4490   89.128     -224.07     -59.431     -23.274      9.0163      5.2413

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================
```

```
SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  13993   -210.54      -21.824      -52.592       59.203      -2.1325      -32.894
  13992   -206.20      -26.710      -81.167       69.092       12.879      -36.522

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   5908   -44.104      -42.229       59.641       29.309      0.97534       2.3666
   5196   -43.939      -42.234       58.031       29.301      0.98912       1.2446

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  14700   -102.39      -17.807      -103.50       1.5046       44.363      -36.828
  11120   -104.78      -18.314      -101.38       12.029       46.899      -50.356

================================================================================
================================================================================
================================================================================
=================================  SET 6  ======================================


USE LOAD STEP      6   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=      6   SUBSTEP=      1   CUMULATIVE ITERATION=     54
  TIME/FREQUENCY=  6.0000
```

```
TITLE= Pad, HE(1), 20 Casks, 515 Kips West (W), Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================

SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5202   93.630     -238.62     -51.986     -21.409     -8.4675      20.693
   5203   93.630     -238.62     -51.986     -21.409      8.4676     -20.694

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================

SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13281  -244.35     -28.146     -52.055      74.374     -8.6190      2.3904
  13280  -244.35     -28.146     -52.054      74.374      8.6200     -2.4166

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================

SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE
```

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14650	-76.058	152.89	51.737	-27.150	11.010	35.856
11783	-76.059	152.89	51.721	-27.151	-11.012	-35.859

NODE SORT REMOVED

========== MINIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11808	-54.233	-232.45	-76.659	-21.413	9.3562	-46.009
14677	-54.214	-232.45	-76.640	-21.411	-9.3609	46.011

========== SET 7 ==========

USE LOAD STEP 7 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 7 SUBSTEP= 1 CUMULATIVE ITERATION= 74
TIME/FREQUENCY= 7.0000
TITLE= Pad, HE(1), 20 Casks, 206 Kips North (z), Max Up, Hard Rock (Ux,Uz)

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

========== MAXIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ

6613	19.536	60.251	-23.002	0.22378	-9.2519	-1.3059
14637	19.531	60.251	-22.996	-0.22378	-9.2522	1.3036

NODE SORT REMOVED

========== MINIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-29.372	-93.444	11.463	-0.28307E-01	-8.6666	-0.83671
11085	-29.368	-93.444	11.455	0.30983E-01	-8.6682	0.83298

NODE SORT REMOVED

========== MAXIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5263	6.6529	8.7057	31.409	0.29036	25.201	-3.5719
13287	6.6529	8.7057	31.407	-0.29033	25.201	3.5717

NODE SORT REMOVED

========== MINIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
8259	-16.304	-13.238	-56.076	0.54439E-02	29.613	0.53943
235	-16.304	-13.238	-56.076	-0.54417E-02	29.613	-0.53946

```
================================================================================
================================  SET 8  ======================================


USE LOAD STEP     8  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     8  SUBSTEP=     1  CUMULATIVE ITERATION=    90
  TIME/FREQUENCY=  8.0000
TITLE= Pad, HE(1), 20 Casks, 206 Kips West (X), Max Up, Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5202   38.641     -98.725     -21.364     -8.6100     -3.4036      8.4382
   5203   38.641     -98.725     -21.364     -8.6100      3.4036     -8.4383

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13281  -86.258     -11.678     -21.027      32.030     -3.5431     0.97519
  13280  -86.257     -11.678     -21.027      32.030      3.5436    -0.98162

NODE SORT REMOVED

================================================================================
```

```
=======================     MAXIMUM VALUES OF SZ     ============================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 0  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   5228   -14.364      58.419       18.703       -5.8899      -3.1589      -7.2798
   5229   -14.364      58.419       18.703       -5.8899       3.1589       7.2795

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ============================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 1  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  11808   -12.653      -96.231      -31.236      -7.1429       3.6824      -17.376
  14677   -12.632      -96.218      -31.210      -7.1463      -3.6851       17.372

================================================================================
================================================================================
================================================================================
=================================  SET 9  ======================================


USE LOAD STEP     9  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     9  SUBSTEP=     1  CUMULATIVE ITERATION=     95
  TIME/FREQUENCY=  9.0000
TITLE= Pad, HE(3), 20 Casks, 171.2 Kips North (Z), Max Dn, Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ============================
```

```
SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   3758    40.286      -126.29      -32.742      -7.8213       9.0039       1.8540
  11782    40.285      -126.29      -32.741       7.8208       9.0039      -1.8535

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================


SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   1639   -43.072      -161.94       34.201     0.18788E-02  -12.863     -0.79760
   9663   -43.072      -161.94       34.201    -0.18984E-02  -12.863      0.79759

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  13953   -40.066      -161.54       37.201      -1.0319      -12.720       3.8669
   5929   -40.064      -161.54       37.200       1.0315      -12.719      -3.8671

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.
```

```
PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
    235   -28.426     -21.578     -77.207    -0.31759E-01   42.598      0.52436
   8259   -28.426     -21.578     -77.207     0.31737E-01   42.598     -0.52436

================================================================================
================================================================================
================================================================================
================================== SET 10  ====================================


USE LOAD STEP     10  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     10  SUBSTEP=      1  CUMULATIVE ITERATION=     99
  TIME/FREQUENCY=  10.000
TITLE= Pad, HE(3), 20 Casks, 171.2 Kips West (X), Max Dn, Hard Rock (Ux,Uz)

ESEL   FOR LABEL= TYPE   FROM      1 TO      1 BY     1

    9056   ELEMENTS (OF     15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF     17051   DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================


SORT ON ITEM=S      COMPONENT=X      ORDER= 0  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY          SYZ          SXZ
   5202    62.413     -181.67     -32.736     -11.224     -3.1968      12.301
   5203    62.413     -181.67     -32.736     -11.224      3.1968     -12.301

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================


SORT ON ITEM=S      COMPONENT=X      ORDER= 1  KABS= 0  NMAX=        2

SORT COMPLETED FOR        2 VALUES.
```

```
PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13280  -70.913     -21.821     -29.892      41.045      5.6955     -4.5348
  13281  -70.913     -21.821     -29.892      41.045     -5.6955      4.5349

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5188  -17.492     -123.96      27.526      7.7771      9.1504     -11.534
   5218  -17.492     -123.96      27.526      7.7771     -9.1504      11.534

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  11097   37.162     -178.81     -42.584     -12.242     -3.1386      17.365
   8232   37.162     -178.81     -42.584     -12.242      3.1386     -17.365

================================================================================
================================================================================
================================================================================
================================  SET 11  ======================================


USE LOAD STEP     11  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     11  SUBSTEP=      1  CUMULATIVE ITERATION=    117
  TIME/FREQUENCY=  11.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips North (Z), Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM      1 TO      1 BY     1
```

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

========== MAXIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14637	42.679	130.50	-59.968	-0.51380	-21.757	2.3783
6613	42.678	130.50	-59.971	0.51419	-21.757	-2.3816

NODE SORT REMOVED

========== MINIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-68.833	-196.86	-20.734	0.54994E-01	-17.653	-1.4274
11085	-68.814	-196.86	-20.713	-0.62923E-01	-17.655	1.4247

NODE SORT REMOVED

========== MAXIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
4551	16.141	19.013	63.009	0.53474	54.151	-7.3208
12575	16.141	19.013	63.009	-0.53474	54.151	7.3208

NODE SORT REMOVED

```
================================================================================
=======================    MINIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
  14700  -36.883     -26.788     -166.07     -0.72446     71.136      7.9379
   6676  -36.879     -26.788     -166.06      0.72411     71.137     -7.9356

================================================================================
================================================================================
================================================================================
================================  SET 12  ======================================


USE LOAD STEP    12  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    12  SUBSTEP=     1  CUMULATIVE ITERATION=   130
  TIME/FREQUENCY=  12.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 32.93 W (Z,X), Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
   6626   61.690     -154.03     -61.076     -16.917     19.714     -13.721
   5202   61.375     -154.19     -42.389     -17.269     17.421     -4.6479

NODE SORT REMOVED
```

```
================================================================================
=======================    MINIMUM VALUES OF SX    ============================

SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13993   -110.92     -11.856     -45.993      33.880      5.7097     -41.193
  14705   -110.78     -11.937     -47.860      30.762     -1.6329     -36.412

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5263    17.374      15.613      59.888      6.6363      44.719      11.732
   4551    17.836      15.605      56.607      6.5017      44.543      11.526

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SZ    ============================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  14700   -71.316     -22.614     -147.22      1.2719      57.637     -29.901
  11120   -65.433     -23.279     -142.19      6.8166      61.057     -35.877

================================================================================
================================================================================
================================================================================
================================    SET 13    ==================================
```

```
USE LOAD STEP    13  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    13  SUBSTEP=     1  CUMULATIVE ITERATION=   135
  TIME/FREQUENCY=  13.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 45 W (Z,X), Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
   5202   71.093     -178.28     -45.611     -19.003      12.831     0.27275
   4490   71.060     -178.14     -49.912     -19.058      12.895    -0.24600

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
  13993  -150.79     -15.613     -48.425      43.965      1.6708     -37.681
  13992  -144.05     -21.269     -77.455      55.568      13.210     -40.110

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2
```

```
SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5908   -35.943     -14.091      54.197      19.846      7.8017      1.8671
   5196   -35.894     -14.064      53.713      19.692      7.5087      2.1937

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SZ    ============================

SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  14700   -82.901     -19.430     -121.91      1.4171      48.996     -33.034
  11120   -76.542     -20.220     -116.34      9.2994      52.213     -42.206

================================================================================
================================================================================
================================================================================
================================  SET 14  ======================================


USE LOAD STEP    14  SUBSTEP     0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=    14  SUBSTEP=     1  CUMULATIVE ITERATION=   141
  TIME/FREQUENCY=  14.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 57.03 W (Z,X), Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================

SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2
```

```
SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5202    78.183     -196.22     -47.350     -19.961      7.6936      5.3227
   4490    78.136     -196.08     -51.193     -20.013      7.8369      4.5308

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================

SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
  13993   -180.85     -19.073     -46.276      52.191     -1.6007     -27.343
  13992   -176.64     -23.260     -70.180      60.785      11.507     -30.499

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================

SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
   5908   -37.031     -37.815      51.355      25.879     0.24554      1.8807
   5196   -36.897     -37.825      49.815      25.890     0.26473     0.84129

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SZ    ============================

SORT ON ITEM=S     COMPONENT=Z     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE     SX          SY          SZ          SXY         SYZ         SXZ
```

14700	-90.889	-15.582	-93.065	1.5331	38.774	-31.974
13988	-96.060	-15.574	-88.115	2.0871	39.991	-35.947

========== SET 15 ==========

USE LOAD STEP 15 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 15 SUBSTEP= 1 CUMULATIVE ITERATION= 153
TIME/FREQUENCY= 15.000
TITLE= Pad, LTSP(2), 20 Casks, 440 Kips West (X), Hard Rock (Ux,Uz)

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

========== MAXIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	82.104	-208.54	-44.559	-18.421	-7.2583	17.902
5203	82.104	-208.54	-44.559	-18.421	7.2584	-17.903

NODE SORT REMOVED

========== MINIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13281	-209.84	-24.484	-46.681	65.191	-7.5052	2.1529

```
  13280  -209.84      -24.484      -46.680       65.191       7.5057      -2.1724

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   5228   -30.494      127.14       41.181      -12.481      -6.7357      -15.677
   5229   -30.494      127.14       41.181      -12.481       6.7358       15.676

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================


SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  11808   -45.925      -203.02      -68.023      -17.934       8.0588      -38.124
  14677   -45.918      -203.02      -67.975      -17.929      -8.0597       38.121

================================================================================
================================================================================
================================================================================
================================  SET 16  ======================================


USE LOAD STEP     16   SUBSTEP      0   FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     16   SUBSTEP=      1   CUMULATIVE ITERATION=    177
  TIME/FREQUENCY=  16.000
TITLE= Pad, LTSP(2), 20 Casks, 176 Kips North (Z), Max Up, Hard Rock (Ux,Uz)

ESEL   FOR LABEL= TYPE   FROM      1 TO      1 BY     1

    9056   ELEMENTS (OF     15348   DEFINED) SELECTED BY   ESEL   COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.
```

```
   11550 NODES (OF     17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================

SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  14637   16.750       51.856      -26.346     -0.22839     -8.6608       1.0512
   6613   16.749       51.856      -26.347      0.22834     -8.6609      -1.0515

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================

SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
  11085  -28.223      -79.034      -11.116    -0.26730E-01 -6.9579      0.63234
   3061  -28.223      -79.034      -11.116     0.26742E-01 -6.9578     -0.63357

NODE SORT REMOVED

================================================================================
=======================     MAXIMUM VALUES OF SZ     ===========================

SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   7070   1.7967     -0.86960       24.866      0.94872      11.361      -5.0802
  15094   1.7930     -0.85489       24.863     -0.95708      11.369       5.0831

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SZ     ===========================
```

```
SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   6676   -15.125      -10.715      -70.036      0.31823      28.699      -3.5010
  14700   -15.120      -10.717      -70.033     -0.31936      28.699       3.4995

================================================================================
================================================================================
================================================================================
==================================  SET 17  ====================================


USE LOAD STEP     17  SUBSTEP      0  FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP=     17  SUBSTEP=      1  CUMULATIVE ITERATION=    201
  TIME/FREQUENCY=  17.000
TITLE= Pad, LTSP(2), 20 Casks, 176 Kips West (X), Max Up, Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM      1 TO      1 BY     1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT       ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================     MAXIMUM VALUES OF SX     ===========================


SORT ON ITEM=S      COMPONENT=X      ORDER= 0   KABS= 0   NMAX=        2

SORT COMPLETED FOR        2 VALUES.

PRINT S     NODAL SOLUTION PER NODE

   NODE     SX           SY           SZ           SXY          SYZ          SXZ
   5202    33.380      -83.919      -17.563      -7.3354      -2.9092       7.1723
   5203    33.380      -83.919      -17.563      -7.3354       2.9093      -7.1727

NODE SORT REMOVED

================================================================================
=======================     MINIMUM VALUES OF SX     ===========================
```

```
 SORT ON ITEM=S      COMPONENT=X      ORDER= 1   KABS= 0   NMAX=        2

 SORT COMPLETED FOR        2 VALUES.

 PRINT S     NODAL SOLUTION PER NODE

    NODE     SX           SY           SZ           SXY          SYZ          SXZ
   13281   -86.687      -9.8367      -19.444       26.245      -3.0186      0.87537
   13280   -86.687      -9.8366      -19.445       26.245       3.0175     -0.88506

 NODE SORT REMOVED

 ================================================================================
 ======================     MAXIMUM VALUES OF SZ     ============================


 SORT ON ITEM=S      COMPONENT=Z      ORDER= 0   KABS= 0   NMAX=        2

 SORT COMPLETED FOR        2 VALUES.

 PRINT S     NODAL SOLUTION PER NODE

    NODE     SX           SY           SZ           SXY          SYZ          SXZ
    5228   -12.451       50.490       16.501      -4.8444      -2.6933      -6.2464
    5229   -12.451       50.490       16.501      -4.8445       2.6934       6.2455

 NODE SORT REMOVED

 ================================================================================
 ======================     MINIMUM VALUES OF SZ     ============================


 SORT ON ITEM=S      COMPONENT=Z      ORDER= 1   KABS= 0   NMAX=        2

 SORT COMPLETED FOR        2 VALUES.

 PRINT S     NODAL SOLUTION PER NODE

    NODE     SX           SY           SZ           SXY          SYZ          SXZ
   11808   -20.489      -81.579      -27.855      -7.1468       3.2384      -15.220
   14677   -20.483      -81.579      -27.829      -7.1441      -3.2386       15.217

 ================================================================================
 ================================================================================
 ================================================================================
 ================================  SET 18  ======================================


 USE LOAD STEP     18   SUBSTEP      0   FOR LOAD CASE 0

 SET COMMAND GOT LOAD STEP=     18   SUBSTEP=      1   CUMULATIVE ITERATION=    226
```

```
  TIME/FREQUENCY=  18.000
TITLE= Pad, LTSP(4), 20 Casks, 156 Kips North (Z), Max Up, Hard Rock (Ux,Uz)

ESEL  FOR LABEL= TYPE  FROM     1 TO     1 BY    1

    9056  ELEMENTS (OF    15348  DEFINED) SELECTED BY  ESEL  COMMAND.

SELECT      ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

   11550 NODES (OF    17051  DEFINED) SELECTED FROM
    9056 SELECTED ELEMENTS BY NELE COMMAND.

================================================================================
=======================    MAXIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
  14637   15.458      50.688     -24.720     -0.19555     -7.9033     0.86984
   6613   15.449      50.688     -24.728      0.19597     -7.9040    -0.88026

NODE SORT REMOVED

================================================================================
=======================    MINIMUM VALUES OF SX    ============================


SORT ON ITEM=S     COMPONENT=X     ORDER= 1  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE

   NODE    SX          SY          SZ          SXY         SYZ         SXZ
   3061  -25.109     -65.282     -14.942     0.60337E-01 -6.4078    -0.58732
  11085  -25.080     -65.283     -14.922    -0.61275E-01 -6.4024     0.57421

NODE SORT REMOVED

================================================================================
=======================    MAXIMUM VALUES OF SZ    ============================


SORT ON ITEM=S     COMPONENT=Z     ORDER= 0  KABS= 0  NMAX=       2

SORT COMPLETED FOR       2 VALUES.

PRINT S    NODAL SOLUTION PER NODE
```

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7070	1.1900	-0.74137	23.170	0.93881	9.4631	-5.0196
15094	1.1812	-0.74227	23.152	-0.93573	9.4631	5.0300

NODE SORT REMOVED

==========
========== MINIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6676	-12.876	-9.0033	-65.900	0.28647	24.131	-2.9508
14700	-12.850	-9.0035	-65.871	-0.28431	24.136	2.9312

==========
==========
==========
========== SET 19 ==========

USE LOAD STEP 19 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 19 SUBSTEP= 1 CUMULATIVE ITERATION= 251
TIME/FREQUENCY= 19.000
TITLE= Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Hard Rock (Ux,Uz)

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

==========
========== MAXIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	28.067	-68.891	-14.625	-6.1858	-2.5613	6.0540
5203	28.067	-68.891	-14.625	-6.1857	2.5613	-6.0544

NODE SORT REMOVED

==========

========== MINIMUM VALUES OF SX ==========

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13280	-80.912	-8.2001	-16.049	21.695	2.5105	-0.65952
13281	-80.912	-8.2000	-16.049	21.695	-2.5100	0.64511

NODE SORT REMOVED

==========

========== MAXIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14650	-25.366	49.938	16.442	-8.7409	3.5046	11.715
11783	-25.366	49.938	16.429	-8.7410	-3.5054	-11.717

NODE SORT REMOVED

==========

========== MINIMUM VALUES OF SZ ==========

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11808	-23.540	-66.773	-23.131	-6.4720	2.8113	-15.049
14677	-23.535	-66.774	-23.110	-6.4703	-2.8126	15.050

==========

```
================================================================================
================================================================================

   15348  ELEMENTS (OF    15348  DEFINED) SELECTED BY  EALL  COMMAND.

   17051  NODES (OF    17051  DEFINED) SELECTED BY NALL  COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED *****  CP =       124.399


*** NOTE ***                                CP=     124.399   TIME= 12:18:09
A total of 1 warnings and errors written to dcslabs4.err.
```